MIC IP starlight 7000 HD, MIC IP dynamic 7000 HD

MIC-71xx, MIC-72xx

BOSCH

en Operation Manual

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1 Safety

1.1 About this Manual

This manual has been compiled with great care and the information it contains has been thoroughly verified. The text was complete and correct at the time of printing. Because of the ongoing development of products, the content of the manual may change without notice. Bosch Security Systems accepts no liability for damage resulting directly or indirectly from faults, incompleteness, or discrepancies between the manual and the product described.

1.2 Legal Information

Copyright
This manual is the intellectual property of Bosch Security Systems, Inc. and is protected by copyright. All rights reserved.

Trademarks
All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

1.3 Safety Precautions

In this manual, the following symbols and notations are used to draw attention to special situations:

Danger!
High risk: This symbol indicates an imminently hazardous situation such as “Dangerous Voltage” inside the product. If not avoided, this will result in an electrical shock, serious bodily injury, or death.

Caution!
Medium risk: Indicates a potentially hazardous situation. If not avoided, this may result in minor or moderate injury. Alerts the user to important instructions accompanying the unit.

Caution!
Low risk: Indicates a potentially hazardous situation. If not avoided, this may result in property damage or risk of damage to the unit.

Notice!
This symbol indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

1.4 Important Safety Instructions

Read, follow, and retain all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operation.

Caution!
TO REDUCE THE RISK OF ELECTRIC SHOCK, DISCONNECT THE POWER SOURCE WHILE INSTALLING THE CAMERA.

Warning!
INSTALLATION SHOULD BE CARRIED OUT BY QUALIFIED PERSONNEL ONLY, IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, ANSI/NFPA, CANADIAN ELECTRICAL CODE, AND ALL LOCAL COUNTRY CODES.

Warning!
INSTALL EXTERNAL INTERCONNECTING CABLES IN ACCORDANCE TO NEC, ANSI/NFPA70 (FOR US APPLICATION) AND CANADIAN ELECTRICAL CODE, PART I, CSA C22.1 (FOR CAN APPLICATION) AND IN ACCORDANCE TO LOCAL COUNTRY CODES FOR ALL OTHER COUNTRIES. BRANCH CIRCUIT PROTECTION INCORPORATING A 20 A, 2-POLE LISTED CIRCUIT BREAKER OR BRANCH RATED FUSES ARE REQUIRED AS PART OF THE BUILDING INSTALLATION. A READILY ACCESSIBLE 2-POLE DISCONNECT DEVICE WITH A CONTACT SEPARATION OF AT LEAST 3 mm MUST BE INCORPORATED.

Warning!
ROUTING OF EXTERNAL WIRING MUST BE DONE THROUGH A PERMANENTLY EARTHED METAL CONDUIT.

Warning!
THE CAMERA MUST BE MOUNTED DIRECTLY AND PERMANENTLY TO A NON-COMBUSTIBLE SURFACE.

- Do not place a canted (45°) camera upright; it can fall over easily. Place the canted camera on its side.
- Do not open the camera unit. Doing so will invalidate the warranty.

Use common-sense safety precautions, especially in situations where there could be risk of injury if any part of the assembly becomes detached and falls. Bosch recommends using the hinged DCA, which allows installers to “hang” the MIC camera temporarily on the DCA to make electrical connections, before bolting the camera to the DCA.

- Ensure that the unit case is properly earthed. If the product is likely to be struck by lightning, ensure that earth bonding connections are made correctly to the mounting of the base of the unit.
- Do not manually back drive the pan or tilt axis of the camera. Doing so will damage the motor drive gear train and will invalidate the warranty.
- Before transporting, supply power to the camera and rotate the ball so that the window points toward the base. This will help to protect the wiper and the window during transit.

1.5 Important Notices

Notice!

This device is intended for use in public areas only.

U.S. federal law strictly prohibits surreptitious recording of oral communications.

Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury and/or serious damage to the unit. Use only with mounting solutions specified by the manufacturer. When a cart is used, use caution and care when moving the cart/unit combination to avoid injury from tip-over. Quick stops, excessive force, or uneven surfaces may cause the cart/unit combination to overturn. Mount the unit per the installation instructions.

Adjustment of controls - Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit.

All-pole power switch - Incorporate an all-pole power switch, with a contact separation of at least 3 mm in each pole, into the electrical installation of the building.If it is needed to open the housing for servicing and/or other activities, use this all-pole switch as the main disconnect device for switching off the voltage to the unit.

Camera signal - Protect the cable with a primary protector if the camera signal is beyond 140 feet, in accordance with *NEC800 (CEC Section 60)*.

Environmental statement - Bosch has a strong commitment towards the environment. This unit has been designed to respect the environment as much as possible.

Electrostatic-sensitive device - Use proper CMOS/MOS-FET handling precautions to avoid electrostatic discharge. NOTE: Wear required grounded wrist straps and observe proper ESD safety precautions when handling the electrostatic-sensitive printed circuit boards.

Fuse rating - For security protection of the device, the branch circuit protection must be secured with a maximum fuse rating of 16A. This must be in accordance with *NEC800 (CEC Section 60)*.

Grounding:

- Connect outdoor equipment to the unit's inputs only after this unit has had its ground terminal connected properly to a ground source.
- Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding terminal.
- Follow proper safety precautions such as grounding for any outdoor device connected to this unit.

U.S.A. models only - *Section 810* of the *National Electrical Code, ANSI/NFPA No.70*, provides information regarding proper grounding of the mount and supporting structure, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Heat sources - Do not install unit near any heat sources such as radiators, heaters, or other equipment (including amplifiers) that produce heat.

Moving - Disconnect the power before moving the unit. Move the unit with care. Excessive force or shock may damage the unit.

Outdoor signals - The installation for outdoor signals, especially regarding clearance from power and lightning conductors and transient protection, must be in accordance with *NEC725* and *NEC800 (CEC Rule 16-224* and *CEC Section 60)*.

Permanently connected equipment - Incorporate a readily accessible disconnect device in the building installation wiring.
Power lines - Do not locate the camera near overhead power lines, power circuits, or electrical lights, nor where it may contact such power lines, circuits, or lights.
Damage requiring service – Unplug the devices from the main AC power source and refer servicing to qualified service personnel whenever any damage to the device has occurred, such as:
- the power supply cable is damaged;
- an object has fallen on the device;
- the device has been dropped, or its enclosure has been damaged;
- the device does not operate normally when the user follows the operating instructions correctly.

Servicing - Do not attempt to service this device yourself. Refer all servicing to qualified service personnel.
This device has no user-serviceable internal parts.

Notice!
This is a **class A** product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Notice!
Ce produit est un appareil de **Classe A**. Son utilisation dans une zone résidentielle risque de provoquer des interférences. Le cas échéant, l'utilisateur devra prendre les mesures nécessaires pour y remédier.

FCC & ICES Information
(U.S.A. and Canadian Models Only)
This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:
– this device may not cause harmful interference, and
– this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a **commercial environment**. This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his expense.
Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.
The user may find the following booklet, prepared by the Federal Communications Commission, helpful: How to Identify and Resolve Radio-TV Interference Problems. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Informations FCC et ICES

(modèles utilisés aux États-Unis et au Canada uniquement)

Ce produit est conforme aux normes FCC partie 15. la mise en service est soumises aux deux conditions suivantes :

– cet appareil ne peut pas provoquer d'interférence nuisible et
– cet appareil doit pouvoir tolérer toutes les interférences auxquelles il est soumit, y compris les interférences qui pourraient influer sur son bon fonctionnement.

AVERTISSEMENT: Suite à différents tests, cet appareil s'est révélé conforme aux exigences imposées aux appareils numériques de **Classe A** en vertu de la section 15 du règlement de la Commission fédérale des communications des États-Unis (FCC). Ces contraintes sont destinées à fournir une protection raisonnable contre les interférences nuisibles quand l'appareil est utilisé dans une **installation commerciale**. Cette appareil génère, utilise et émet de l'energie de fréquence radio, et peut, en cas d'installation ou d'utilisation non conforme aux instructions, générer des interférences nuisibles aux communications radio. L'utilisation de ce produit dans une zone résidentielle peut provoquer des interférences nuisibles. Le cas échéant, l'utilisateur devra remédier à ces interférences à ses propres frais.

Au besoin, l'utilisateur consultera son revendeur ou un technicien qualifié en radio/télévision, qui procédera à une opération corrective. La brochure suivante, publiée par la Commission fédérale des communications (FCC), peut s'avérer utile : How to Identify and Resolve Radio-TV Interference Problems (Comment identifier et résoudre les problèmes d'interférences de radio et de télévision). Cette brochure est disponible auprès du U.S. Government Printing Office, Washington, DC 20402, États-Unis, sous la référence n° 004-000-00345-4.

UL Disclaimer

Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in Standard(s) for Safety for Information Technology Equipment, UL 60950-1 . UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.

UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING-RELATED FUNCTIONS OF THIS PRODUCT.

1.6 Important Notices - Illumination Safety

The text in this section applies only to cameras which have the optional illuminator accessory.

Notice!

This product has been tested according to standard IEC62471:2006 “Photobiological safety of lamps and lamp systems”. The product emissions exceed the EXEMPT Group limit for both Retinal Blue Light and Cornea/Lens infrared hazard as defined by IEC 62471:2006. The product was found to meet the Risk Group 1 exposure limits for IR and White LEDs.

The IEC 62471 provides the methods to determine the risk group of any lamp or any product incorporating a lamp. The risk groups in IEC 62471 indicate the degree of risk from potential optical radiation hazards. The risk groups were developed based upon decades of lamp use experience and the analysis of accidental injuries related to optical radiation emission.
EXEMPT Group – no optical hazard is considered reasonably foreseeable, even for continuous, unrestricted use. Typical examples are most frosted incandescent lamps and fluorescent lamps used in domestic applications.
Risk Group 1 – products are safe for most use applications, except for very prolonged exposures where direct ocular exposures may be expected. An example of Risk Group 1 is a domestic battery operated torch (flashlight).
Exposure Hazard Value (EHV) is a ratio of the Exposure Level (distance, exposure time) to Exposure Limit Value (ELV). When EHV is greater than 1, the device has exceeded the Exposure Limit Values for a particular Risk Group. The ELV is the level where optical radiation to the eye or skin is not expected to result in adverse biological effects.
The **Hazard Distance (HD)** is the distance from the source at which the Exposure Level equals the appropriate ELV. In other words, when EHV=1 for a particular Risk Group.
Regarding the Cornea / Lens infrared hazard of this product, the Exposure Hazard Value (EHV) at a test distance of 200mm is 2.19 based on EXEMPT Group exposure limits. The EHV based on Risk Group 1 limits is 0.386. The HD for the Exempt Group is 297 mm.
Regarding the Retinal Blue Light hazard, the EHV is 22.9 based on the EXEMPT Group exposure limits and a test distance of 200 mm. The EHV based on Risk Group 1 limits is 0.266. The HD for the Exempt Group is 2675 mm.
These values have been summarized in the table below:

Hazard	EXEMPT Group Limits			Risk Group 1 Limits		
	t, duration	d, distance	EHV	t, duration	d, distance	EHV
Cornea / Lens Infrared Hazard	1000 s Hazard Distance	200 mm 279 mm	2.19	100 s	200 mm	0.386
Retinal Blue Light Hazard	10,000 s Hazard Distance	200 mm 2675 mm	22.9	100s	200 mm	0.266

1.7 Customer Support and Service

If this unit needs service, contact the nearest Bosch Security Systems Service Center for authorization to return and shipping instructions.

Service Centers

USA

Telephone: 800-366-2283 or 585-340-4162
Fax: 800-366-1329
Email: cctv.repair@us.bosch.com

Customer Service

Telephone: 888-289-0096
Fax: 585-223-9180
Email: security.sales@us.bosch.com

Technical Support

Telephone: 800-326-1450
Fax: 585-223-3508 or 717-735-6560
Email: technical.support@us.bosch.com

Repair Center

Telephone: 585-421-4220
Fax: 585-223-9180 or 717-735-6561
Email: security.repair@us.bosch.com

Canada

Telephone: 514-738-2434
Fax: 514-738-8480

Europe, Middle East & Africa Region

Please contact your local distributor or Bosch sales office. Use this link:
http://www.boschsecurity.com/startpage/html/europe.htm

Asia Pacific Region

Please contact your local distributor or Bosch sales office. Use this link:
http://www.boschsecurity.com/startpage/html/asia_pacific.htm

More Information

For more information please contact the nearest Bosch Security Systems location or visit www.boschsecurity.com

2 Unpacking

- This equipment should be unpacked and handled with care. Check the exterior of the packaging for visible damage. If an item appears to have been damaged in shipment, notify the shipper immediately.
- Verify that all the parts listed in the Parts List below are included. If any items are missing, notify your Bosch Security Systems Sales or Customer Service Representative.
- Do not use this product if any component appears to be damaged. Please contact Bosch Security Systems in the event of damaged goods.
- The original packing carton is the safest container in which to transport the unit and must be used if returning the unit for service. Save it for possible future use.

MIC7000 packaging is designed:

- to allow installers to configure the camera inside the shipping box.
- to provide a temporary table-top or desk-top stand.

Caution!
Take extra care lifting or moving MIC7000 cameras because of their weight (6.7 kg (14.7 lb)).

2.1 Parts List - Camera

One (1) MIC71xx or MIC72xx Camera
One (1) Quick Installation Guide
One (1) Document DVD
One (1) spanner tool [to remove and to attach the yoke caps in order to cant the camera if desired, and to remove the access plug from the camera head when installing the optional illuminator accessory (sold separately)]
One (1) base gasket
One (1) RJ45 coupler
Four (4) MAC address labels
One (1) ground screw

2.2 Additional Tools

The following table lists additional tools (not supplied by Bosch) that may be required to install a MIC camera or its accessories:

1 Phillips-head screwdriver to secure the ground lug of the camera
1 Adjustable wrench or socket set to secure the base of the camera to mounting accessories
1 Torque wrench with 1/4 in. drive to use the spanner tool (supplied) for removing yoke caps and blanking plugs if necessary
1 Torx driver, T27, to remove Torx bolts from yoke arms if canting the camera (optional)

3 Product Description

The MIC7000 camera is a high-performance, weatherproof, ruggedized, fully functional day/night PTZ camera that has been designed to offer a reliable, robust, and high-quality surveillance solution for extreme security applications.

Image control and quality are integral aspects of any PTZ camera, and the MIC7000 camera delivers outstanding clarity and image detail. The camera has a professional-grade imaging platform capable of delivering 720p50/60 or 1080p25/30 HD resolution in environments with ambient light extremes.

Both camera variants--MIC IP starlight 7000 HD (MIC71xx) and MIC IP dynamic 7000 HD (MIC72xx)--have a 30x optical zoom (12x digital) and flexible, field-selectable mounting orientations (upright, inverted, or canted) to achieve the perfect field of view.

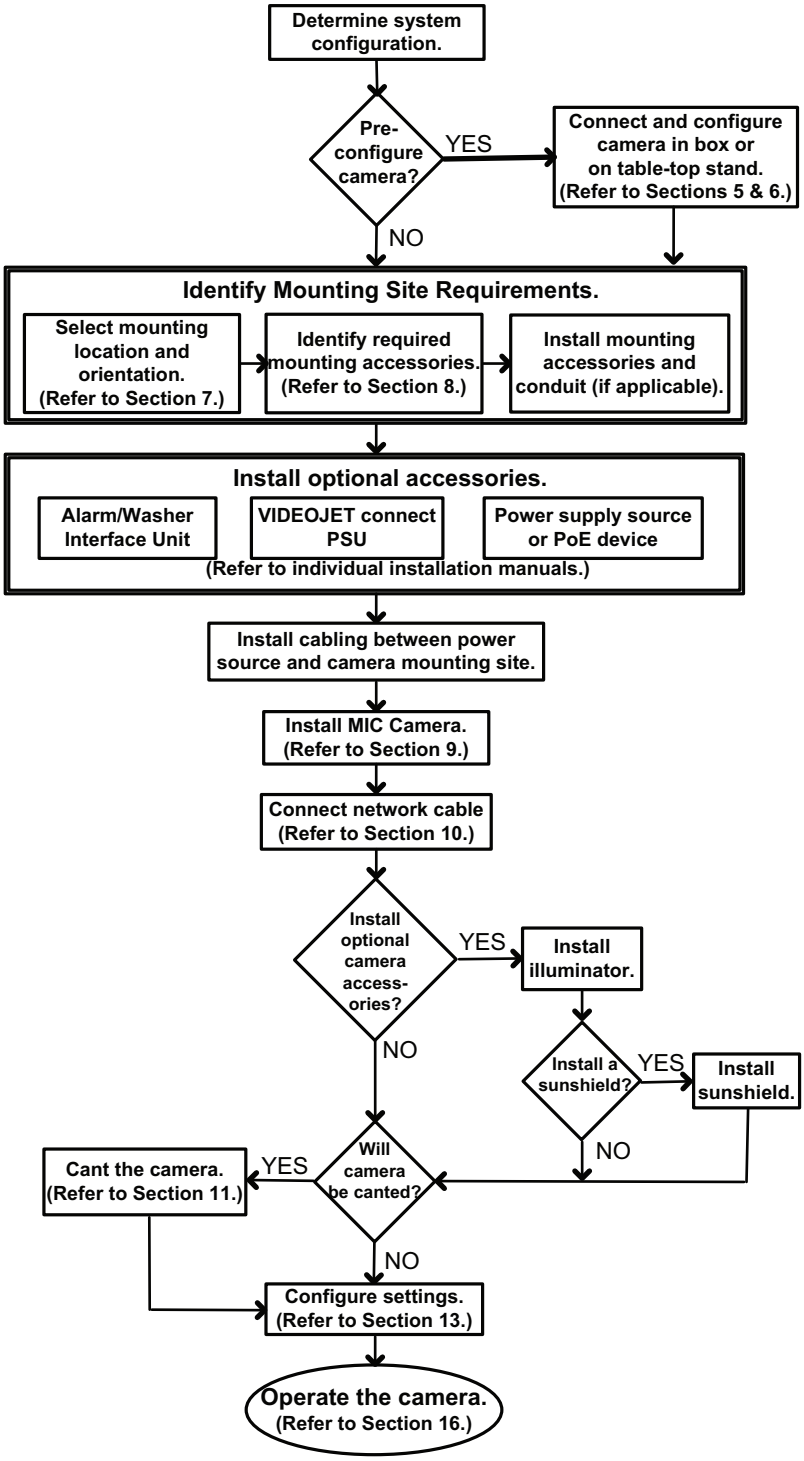
A long-life silicone wiper blade mounted on a spring-loaded arm is standard on all MIC cameras.

The following table identifies the optional accessories for MIC cameras. Refer to the datasheets of each accessory for details. Some accessories may not be available in all regions.

Accessories	Description	Accessories	Description
MIC-DCA-H - MIC-DCA-HB - MIC-DCA-HW - MIC-DCA-HG	Hinged Deep Conduit Adapter in Black White Grey	MIC-SCA - MIC-SCA-BD - MIC-SCA-WD - MIC-SCA-GD	Shallow Conduit Adapter in Black White Grey
MIC-CMB - MIC-CMB-BD - MIC-CMB-WD - MIC-CMB-GD	Corner Mount Bracket in Black White Grey	MIC-SPR - MIC-SPR-BD - MIC-SPR-WD - MIC-SPR-GD	Spreader Plate in Black White Grey
MIC-WMB - MIC-WMB-BD - MIC-WMB-WD - MIC-WMB-GD	Wall Mount Bracket in Black White Grey	MIC-ILx-100 - MIC-ILB-100 - MIC-ILW-100 - MIC-ILG-100	User-installable illuminator accessory designed specifically for MIC7000 cameras (except the extreme low temperature models) , in Black White Grey
MIC-PMB	Pole Mount Bracket (stainless steel only)	MICIP67-5PK	IP67 Weatherization/Connector Kit
VJC-7000-90	VIDEOJET connect (Full-featured network interface unit/power supply)	NPD-6001A	60 W midspan [Not for use with extreme low temperature models or with the illuminator accessory.]
VG4-A-PSU1 VG4-A-PSU2	24 VAC (96 W) power supply	NPD-9501A	95 W midspan
MIC-ALM-WAS-24	Alarm and washer interface accessory unit	MIC-67SUNSHLD	Sunshield (white only)

4 Overview of Installation Steps

The following figure identifies the steps to install a MIC7000 camera.
To install your MIC camera, follow these steps in sequence.
Note: Depending on your model of camera, your desired mounting location and orientation, as well as your mounting brackets and chosen camera accessories, you may not need to complete every step.

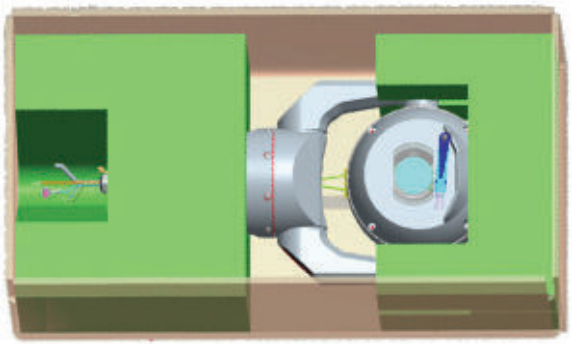

Determine system configuration.
Pre-configure camera?
YES
Connect and configure camera in box or on table-top stand. (Refer to Sections 5 & 6.)
NO
Identify Mounting Site Requirements.
Select mounting location and orientation. (Refer to Section 7.)
Identify required mounting accessories. (Refer to Section 8.)
Install mounting accessories and conduit (if applicable).
Install optional accessories.
Alarm/Washer Interface Unit
VIDEOJET connect PSU
Power supply source or PoE device
(Refer to individual installation manuals.)
Install cabling between power source and camera mounting site.
Install MIC Camera. (Refer to Section 9.)
Connect network cable (Refer to Section 10.)
Install optional camera access-ories?
YES
Install illuminator.
NO
Install a sunshield?
YES
Install sunshield.
NO
Will camera be canted?
YES
Cant the camera. (Refer to Section 11.)
NO
Configure settings. (Refer to Section 13.)
Operate the camera. (Refer to Section 16.)

5 Configuration Programming in the Shipping Box

Caution!
Take extra care lifting or moving MIC7000 cameras because of their weight (6.7 kg (14.7 lb)).

The camera packaging allows installers to connect the camera to the network and configure the camera still in the box.

1. Remove the accessories box from the top, middle section of the box.



2. Supply power to the camera and *Connect the Camera to the Network, page 28*. Note that the wiper moves one time across the camera window, and then returns to parked position.
3. Configure the camera. Refer to *Configuration, page 37* for details.

Note: Do not change the camera orientation to “Inverted” while the camera is still in the box. The camera head must be free to rotate. If you must change the camera’s orientation to “Inverted,” remove the camera from the box and configure it by following the steps in *Configuration Programming on a Temporary Table-top Stand, page 17*.

4. Disconnect the wires/cables from the connectors in the base of the camera.

6 Configuration Programming on a Temporary Table-top Stand

The camera (still in the foam) can stand temporarily on a flat, horizontal surface such as a desk or a table during initial network connection and configuration.

1. Remove the accessories box from the top, middle section of the box.
2. Remove the camera, still in the foam, from the box. Place the camera upright on a flat, horizontal surface.
3. Remove the foam covering the head of the camera.

4. Supply power to the camera and *Connect the Camera to the Network, page 28*. Note that the wiper moves one time across the camera window, and then returns to parked position.
5. Configure the camera. Refer to *Configuration, page 37* for details.

Notice!

If you change the camera orientation to “Inverted” (from the Settings page of the web browser: Advanced > Camera > Installer Menu > Orientation), then the camera head will rotate automatically into inverted position (180°). Note that the visor will be near the top of the body of the camera.

6. Disconnect the wires/cables from the connectors in the base of the camera.

7 Mounting Location and Mounting Orientation

7.1 Select the Mounting Location

MIC cameras are designed for easy installation in various locations such as directly onto buildings and poles suitable to support CCTV equipment.
Select a secure installation location and mounting position for the device. Ideally, this is a location where the device cannot be interfered with either intentionally or accidentally.
Ensure that the location has the appropriate clearance from power and lightning conductors, in accordance with *NEC725* and *NEC800 (CEC Rule 16-224* and *CEC Section 60)*.
Do not install the device near:

– Any heat sources
– Any overhead power lines, power circuits, or electrical lights, or where the device may contact power lines, circuits, or lights

▸ Ensure that the selected mounting surface is capable of supporting the combined weight of the camera and mounting hardware (sold separately) under all expected conditions of load, vibration, and temperature.

Notice!

MIC cameras must be secured to one of the following surfaces:
- Concrete (Solid/Cast)
- Concrete Masonry Unit (Concrete Block)
- Brick (all types)
- Metal (Steel/Aluminum, minimum 1/8-in. thick)

Caution!

Risk of lightning strikes
If the camera is installed in a highly exposed location where lightning strikes may occur, then Bosch recommends installing a separate lightning conductor within 0.5 m (1.6 ft) of the camera and at least 1.5 m (4.9 ft) higher than the camera. A good earth bonding connection to the camera housing itself will provide protection against damage from secondary strikes. The camera housing itself is constructed to cope with secondary strikes. If the correct lightning protection is applied, then no damage to the internal electronics or camera should result.

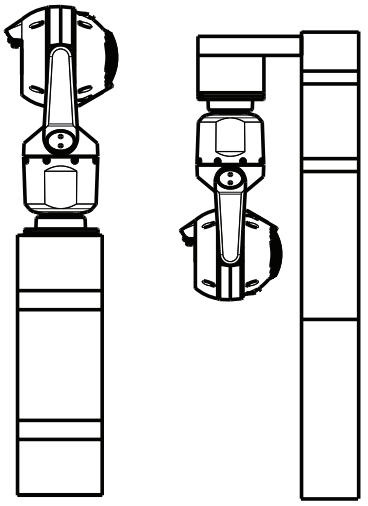
Installation in a damp environment (for example, near a coastline)

The fasteners and fixtures shipped with the camera help to keep the camera secure. Always use Bosch-supplied screws and other fasteners when installing or performing maintenance on the camera.
The camera head has three (3) plastic screws that are factory-installed to prevent corrosion in units which do not have accessories installed on the camera head. If you install a sunshield or an illuminator accessory, you will remove those screws and replace them with the screws that ship with each accessory.
Before installation, inspect the metal parts of the camera for paint that is chipped or otherwise damaged. If you notice any paint damage, touch up the damage with locally available paint or sealants.

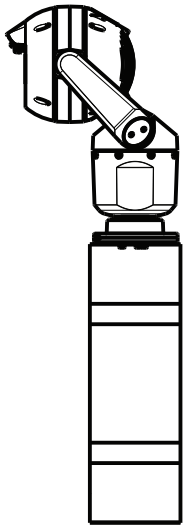
Avoid installation practices that may bring the camera's metal mountings in contact with materials such as stainless steel. Such contacts can result in galvanic corrosion and degrade the cosmetic appearance of the camera. These cosmetic damages caused by improper installation are not covered by warranty as they do not affect the functionality of the camera.

7.2 Select the Mounting Orientation

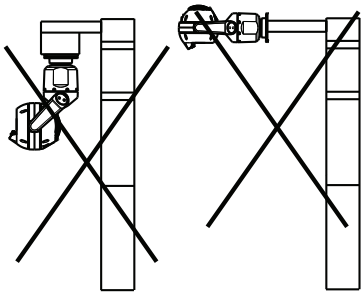
MIC Series cameras are designed to be mounted upright (straight up, 90°), inverted (straight down, 90°), or canted upright (ball up, 45°). The tilt limits for the canted unit prevent it from working properly if mounted ball down. See the figures below for illustrations of the correct and the incorrect mounting orientations of MIC cameras.



Correct mounting orientation - upright, inverted



Correct mounting orientation - canted



Incorrect mounting orientation

Note the position of the visor when the camera is installed in inverted orientation. The visor is close to the top of the pan shaft (the body of the MIC), instead of at the bottom of the inverted camera.

Note: For canted cameras, ensure that your mounting location provides the necessary clearance (370 mm (14.6 in.)) for the camera head to pan.

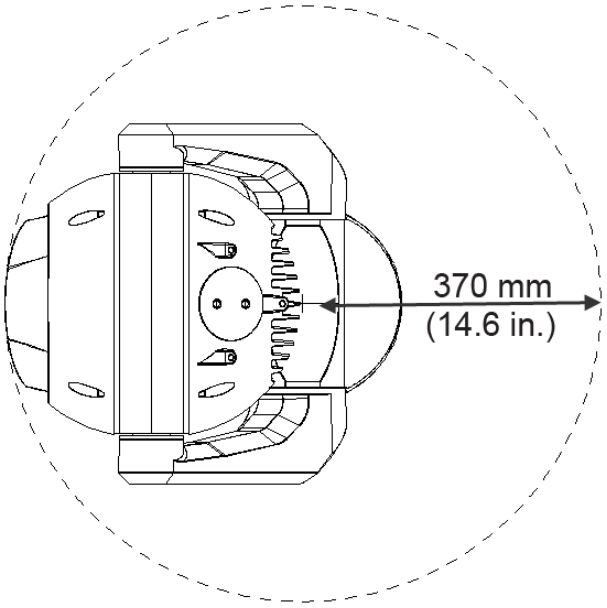


Figure 7.1: Top view of canted MIC7000 illustrating distance of pan clearance

The figure below illustrates the tilt range of the camera in upright orientation.

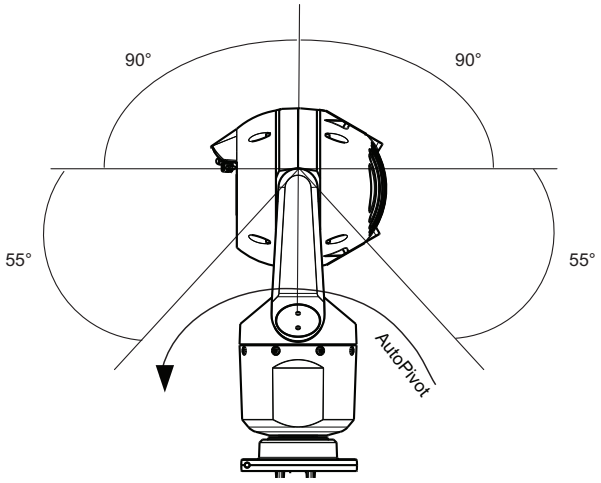


Figure 7.2: MIC7000 Tilt Range: 145° each direction; 290° if AutoPivot enabled

8 Overview of Mounting Options

Bosch sells a complete series of mounting brackets that support multiple mounting configurations.
The most common type of mounting location is the top of a pole suitable to support CCTV equipment and that provides a robust mounting platform to minimize camera motion and typically has a large base cabinet for mounting ancillary equipment such as power supplies. The hinged DCA is well-suited to installations on top of a pole.

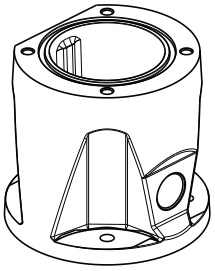
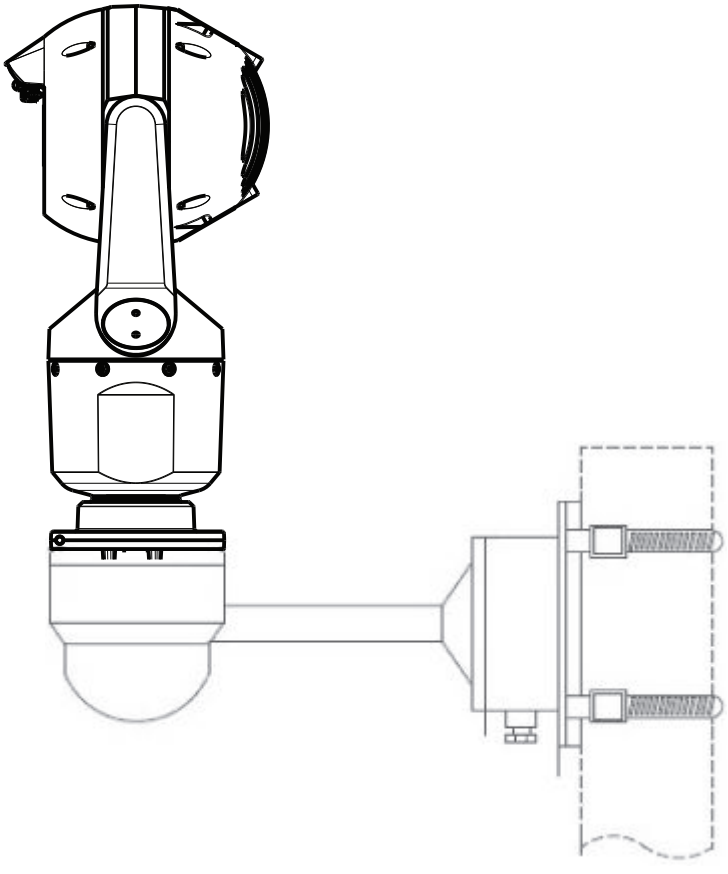


Figure 8.1: Typical hinged DCA mount configuration

The camera can also be mounted on the side of a lamp post, pole, or similar column using the Pole Mount Bracket (MIC-PMB). Be aware that lamp posts can often be subject to movement and are not suitable platforms in all conditions or for all applications.



The figure below identifies the three mounting brackets (each sold separately) that are necessary to mount the MIC camera on the side of a pole.
Note: The figure identifies the part numbers, as well as the codes for the available colors (-BD for black, WD for white, and GD for grey) of each mounting bracket.

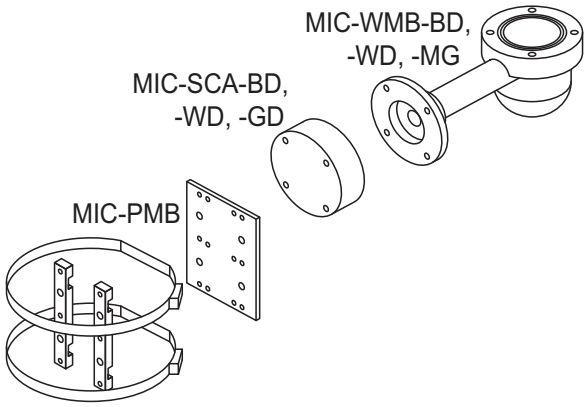


Figure 8.2: Typical Pole mount configuration

Other locations for mounting the camera include the top of a building, the side (wall) of a building, the corner of a building, and under the eave of a building.

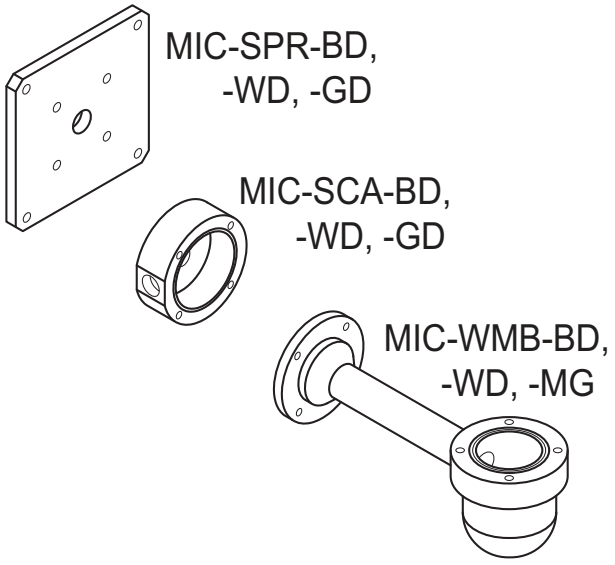


Figure 8.3: Typical Wall mount configuration

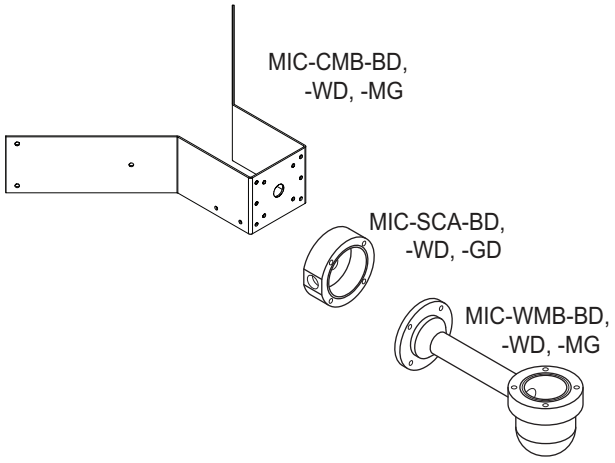


Figure 8.4: Typical Corner mount configuration

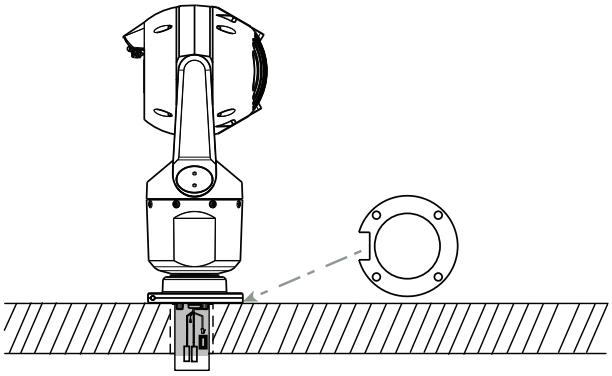


Figure 8.5: Direct surface mount – camera upright (MIC + base gasket)

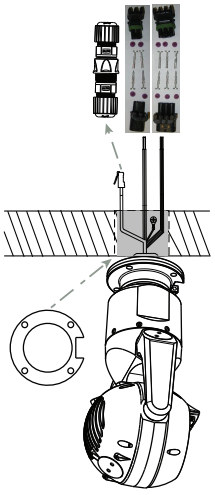


Figure 8.6: Direct surface mount – camera inverted (MIC + base gasket + IP67 Weatherization/Connector Kit)

Notice!
Observe all appropriate safety precautions and local building regulations.

Refer to the MIC Series Mounting Brackets Installation Guide for installation instructions.

9 Install the Camera

Caution!
Installation must be made by qualified personnel and conform to ANSI/NFPA 70 (the National Electrical Code® (NEC)), Canadian Electrical Code, Part I (also called CE Code or CSA C22.1), and all applicable local codes. Bosch Security Systems, Inc. accepts no liability for any damages or losses caused by incorrect or improper installation.

Caution!
ELECTRIC SHOCK HAZARD
To reduce the risk of electric shock, disconnect power to the camera and/or to the power supply unit before moving the camera, before installing any accessories, and before mounting the camera.

You can install the camera:
- onto a MIC-DCA or a MIC wall mount
  or
- directly to a mounting surface (using the optional IP67 Weatherization/Connector Kit (MICIP67-5pk, sold separately).

Refer to the manual provided with the mount or with the kit for installation instructions.

Notice!
To maintain the NEMA 6P rating when the camera is mounted to a MIC-DCA, installers must ensure that the user-supplied cable glands or conduit connections have NEMA 6P ratings.

10 Make Connections - Power and Control

10.1 About Camera Power and Control

The camera transmits PTZ control commands and images over a TCP/IP network. It also allows users to configure the camera display settings, camera operating settings, and to configure the network parameters.
The camera incorporates a network video server in the IP module. The primary function of the server is to encode video and control data for transmission over a TCP/IP network. With its H.264 encoding, it is ideally suited for IP communication and for remote access to digital video recorders and multiplexers. The use of existing networks means that integration with CCTV systems or local networks can be achieved quickly and easily. Video images from a single camera can be simultaneously received on several receivers.

10.2 Power Source Options

The camera can be powered by a network compliant to High Power-over-Ethernet (Bosch's version of High PoE) using a Bosch model of High PoE Midspans (sold separately). With this configuration, only a single (Cat5e/Cat6) cable connection is required to view, to power, and to control the camera.
The camera can also accept a standard 24 VAC power source if a High PoE network interface will not be used. User-supplied wiring must be in compliance with electrical codes (Class 2 power levels).
For maximum reliability, the camera can be connected simultaneously to a High PoE Midspan and a separate 24 VAC power source. If High PoE and 24 VAC are applied simultaneously, the camera usually selects auxiliary input (24 VAC) and will draw minimal power from the High PoE Midspan. If the 24 VAC power source fails, the camera switches power input seamlessly to High PoE. After the 24 VAC power source is restored, the camera switches power input again to 24 VAC.
If connected to both power sources, the camera will operate at 24 VAC if High PoE is not available.

Warning!

Bosch's version of High PoE:
If supplying power to the camera by PoE or a midspan device, you must install additional surge protection.

In the table below, an "X" identifies the power source options for MIC7000 camera models.

CAMERA MODELS	60 W midspan	95 W midspan	VIDEOJET connect	24 VAC PSU
Standard models with illuminator		X	X	X
Standard models without illuminator	X	X	X	X
Extreme low temperature models		X	X	X

Note: The MIC7000 illuminator accessory is not compatible with the extreme low temperature models (including MIC-7130-PB4PB, MIC-7130-PW4PB, MIC-7230-PB4PB, and MIC-7230-PW4PB).

The table below identifies the power devices that can be connected simultaneously to the camera.

If power is supplied from:	Camera can receive power simultaneously from:
60 W midspan (NPD-6001A)	24 VAC PSU (VG4-A-PSU1, VG4-A-PSU2)
95 W midspan (NPD-9501A)	
VIDEOJET connect (VJC-7000-90)	

Caution!
Compliance with EN50130-4 Alarm Standard – CCTV for Security Applications
To meet the requirements of the EN50130-4 Alarm Standard, an ancillary uninterruptable power (UPS) supply is necessary. The UPS must have a **Transfer Time** between 2–6 ms and a **Backup Runtime** of greater than 5 seconds for the power level as specified on the product datasheet.

10.3 Ethernet Connections

Caution!
Ethernet cables must be routed through earth-grounded conduit capable of withstanding the outdoor environment.

Note: Consult the National Electrical Code (NEC) for cable bundling requirements and limitations.

Cable Type	Cat5e/Cat6 Ethernet (directly to the camera, or to a network switch between the camera and the network)
Maximum Distance	100 m (330 ft)
Bandwidth	100 Base-TX
High PoE (95W required for models with illuminators)	Use the 95 W midspan sold by Bosch.
High PoE (60W only for models without illuminators)	Use the 60 W midspan sold by Bosch, or a midspan that is compliant to the IEEE 802.3at, class 4 standard.
Terminal Connector	RJ45, Male

10.4 Camera Connections

All electrical and data connections from the camera are made from the connectors in the base of the camera.

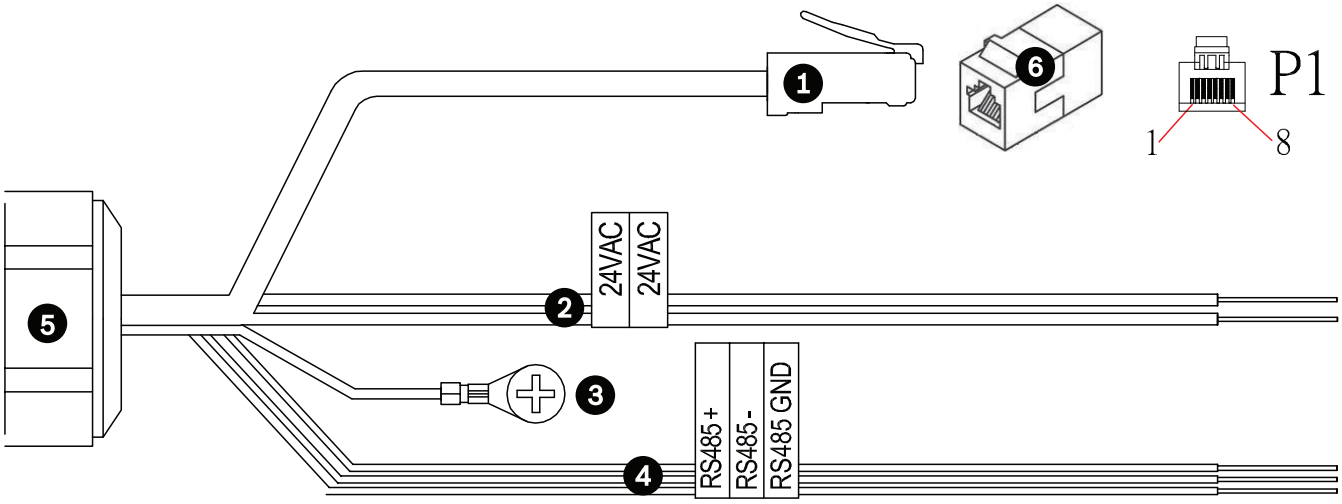


Figure 10.1: MIC7000 connectors

	Description	Wire Color
1	RJ45 (Cat5e/Cat6) connector (male) (supporting High PoE) for power and communication between a Bosch model of High PoE Midspan or a VJC-7000-90	
2	24 VAC power wires (24 gage) to VG4-A-PSU1 or VG4-A-PSU2 (if not using a PoE network)	Line (L) = Black Neutral (N) = White
3	Chassis (Earth) ground wire (18 gage) with connector lug	Green
4	RS-485 connections for communication to / from the MIC-ALM-WAS-24	**+** = Purple **-** = Yellow **GND** = Brown
5	Liquid-tight cordgrip in the base of the camera	
6	RJ45 coupler (female to female)	

Note: If the MIC camera will be installed directly to a mounting surface, instead of onto a MIC DCA or a MIC wall mount bracket, Bosch recommends using the optional IP67 Weatherization/ Connector Kit (MICIP67-5pk, sold separately) to protect the connections against moisture and dust particles. Each kit provides components for connecting up to five (5) MIC cameras. Refer to the manual provided with the kit for installation instructions.

10.5 Connect the Camera to the Network

Note: Refer to the following figure for an illustration of both options.

Option A:

1. Connect an Ethernet cable (Cat5e/Cat6) from the RJ45 connector of the camera to a network switch attached to the Local Area Network (LAN).
2. Connect the dedicated network switch to the RJ45 connector on the computer.
3. Connect the 24 VAC wires to the power source.
4. Connect the RS-485 wires to the MIC-ALM-WAS-24 (optional).
5. Attach the green ground wire (item 3 in the figure above) from the camera to an earth-ground connection on the mounting surface using the supplied screw or a suitable user-supplied fastener.

Option B:

1. Connect an Ethernet **crossover** cable from the RJ45 connector of the camera directly to a networking device such as a computer, a DVR/NVR, etc.
2. Attach the green ground wire (item 3 in the figure above) from the camera to an earth-ground connection on the mounting surface using the supplied screw or a suitable user-supplied fastener.

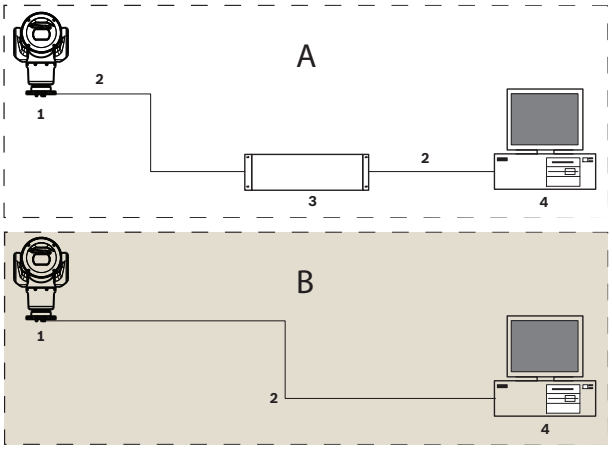


Figure 10.2: MIC7000 IP System Configuration

1	MIC7000 camera
2	IP connection
3	Network switch
4	Networking device (computer, DVR/NVR, etc.)

11 Cant the Camera

Note:
For simplicity, the graphics in this section are only of the camera (and the specific accessory that you are installing, if applicable). The graphics do not depict other accessories that you may have installed already.
MIC7000 cameras feature on-site canting functionality.
Installers can adjust the camera from an upright position to a canted position if desired. This allows the camera to be installed at a 45º angle so that its field of view (FOV) can observe the scene directly beneath the camera.
Note: Canting is not applicable when the camera is installed in inverted orientation.

Warning!
Risk of bodily injury.
Unplug the device from its power source before canting the device. Ensure that the head is supported so that it doesn't tilt downward unexpectedly after the Torx screws are removed from the yoke arms and pinch fingers or other body parts.

Notice!
Risk of damage to the camera
Do not, under any circumstances, cant the camera while the camera is on its side. Cant the camera from an upright position only, in order to prevent screws or other objects from falling into the open spaces in the arms when the yoke caps are removed.

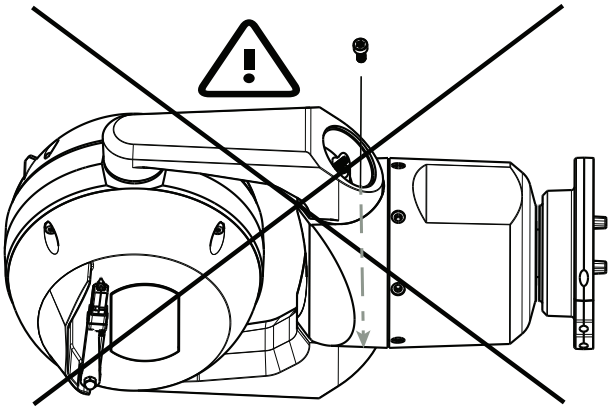


Figure 11.1: Do NOT allow screws or other objects to fall inside camera!

Warning!
Risk of bodily injury.
Do not stand the canted (45°) MIC camera upright on the camera base or on an unsecured DCA, with the DCA base upright! It is unstable and might fall and cause bodily injury and/or damage to the camera. Bosch strongly recommends canting the camera after attaching it to a DCA and mounting it in the desired location.

Notice!

If your MIC camera will be canted, install the sunshield first.
If your MIC camera will have both illuminator and sunshield accessories, install the illuminator first.

Extreme low temperature models do not support a sunshield.

To cant the camera, follow these steps:
1. Remove the yoke cap (item 3 in the figure below) on one yoke arm of the camera, using a Torque wrench with ¼ in. drive (item 1, not supplied) with the spanner tool (item 2, supplied).
Repeat for the second arm.

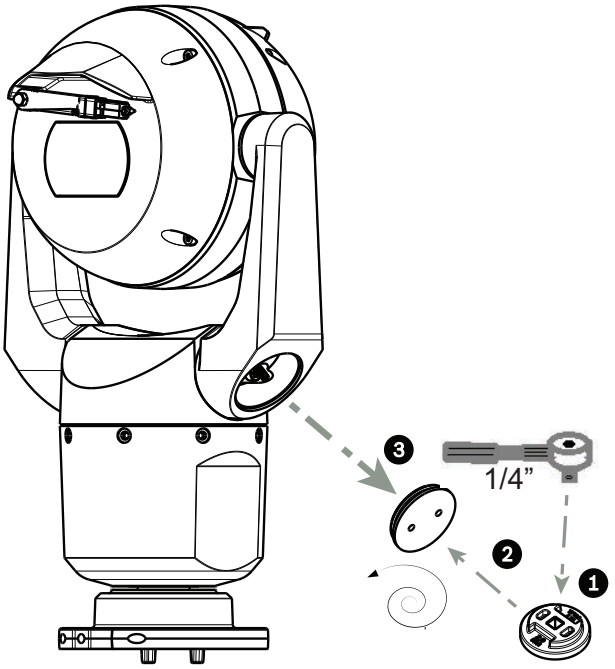


Figure 11.2: Remove yoke caps with spanner tool

2. Remove the two (2) T27 Torx screws at the bottom of one yoke arm using a T27 Torx wrench (not supplied).

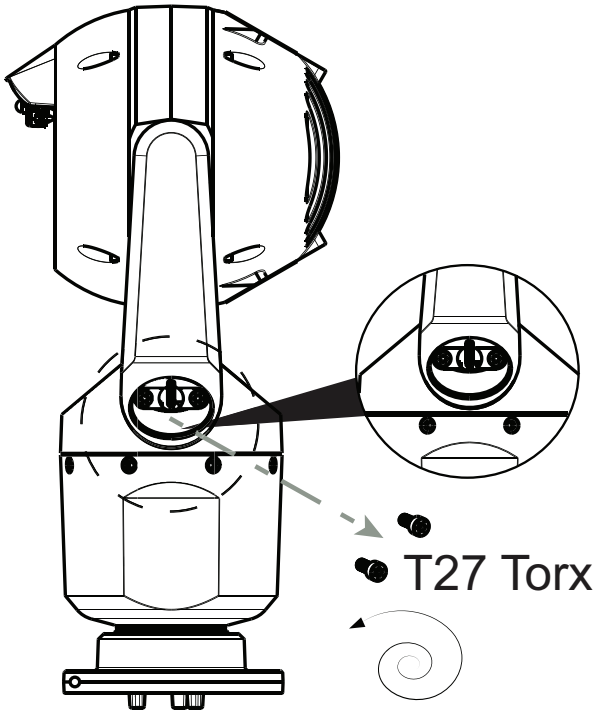


Figure 11.3: Remove screws from yoke arms

Notice!
Risk of damage to the device.
Carefully support the head of the camera while completing the next three (3) steps.

3. Repeat step above for the second arm.
4. Carefully rotate the arms and head assembly forward.

Notice!
Risk of damage to the device.
Do not cant the camera, or let it fall, in the wrong direction! The camera should cant only in the direction indicated in the figure directly below.

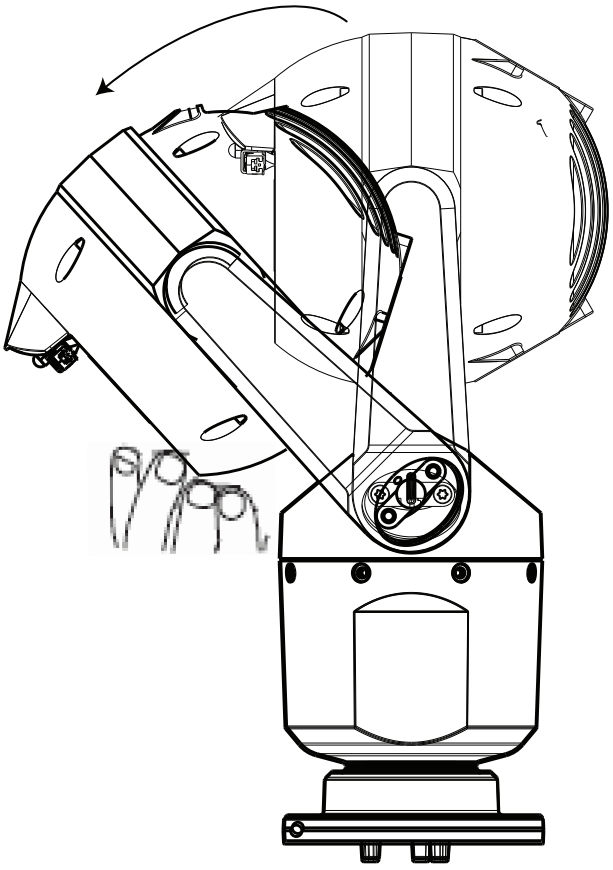


Figure 11.4: Canting the camera head

5. Reinsert two (2) Torx screws into each yoke arm. Tighten the screws.

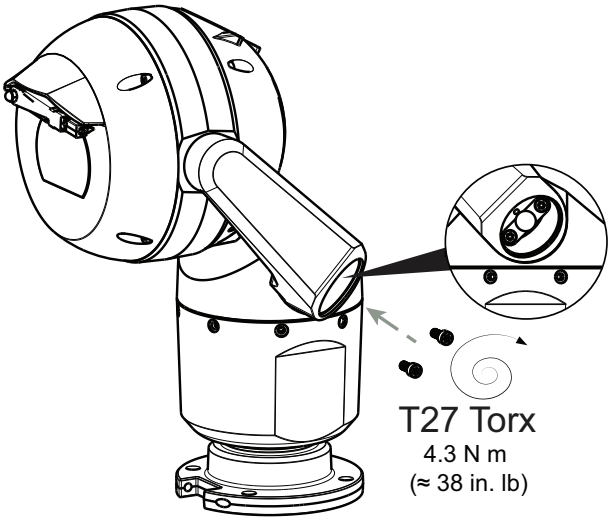


Figure 11.5: Tighten yoke arm screws

6. Attach the yoke caps using the Torque wrench with ¼ in. drive with the spanner tool.

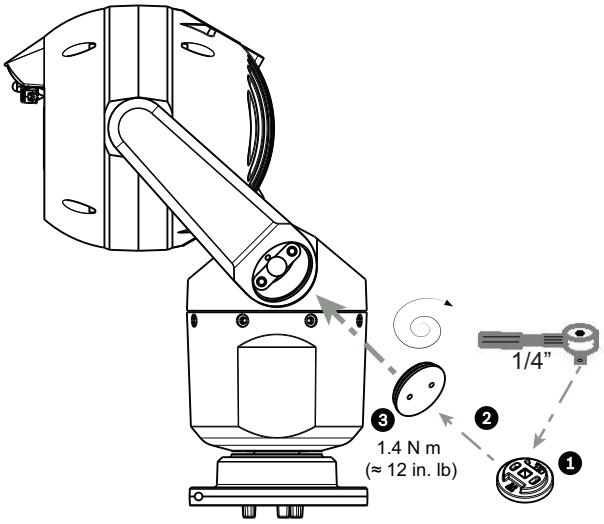
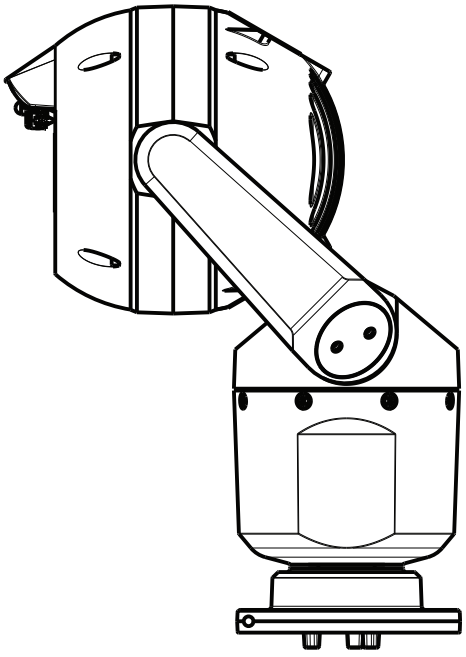


Figure 11.6: Attach yoke caps

7. Canting is complete.



12 Typical System Configurations

12.1 Typical IP Configuration with 95 W midspan (no I/O connections)

Figure 12.1: Typical IP configuration with 95 W midspan (no I/O connections)

1	MIC7000 camera
2	MIC Hinged DCA (MIC-DCA-Hx)
3	High PoE (Network) cable (Cat5e/Cat6) (user-supplied) between camera and 95 W midspan (NPD-9501A)
4	95 W midspan (NPD-9501A)
5	Data only IP cable (Cat5e/Cat6) (user-supplied) between midspan and head-end network

Note: The total length of Cat5e/Cat6 cable must be less than 100 m (328 ft) between the camera and the head-end system.

12.2 Typical Configuration with MIC-ALM-WAS-24

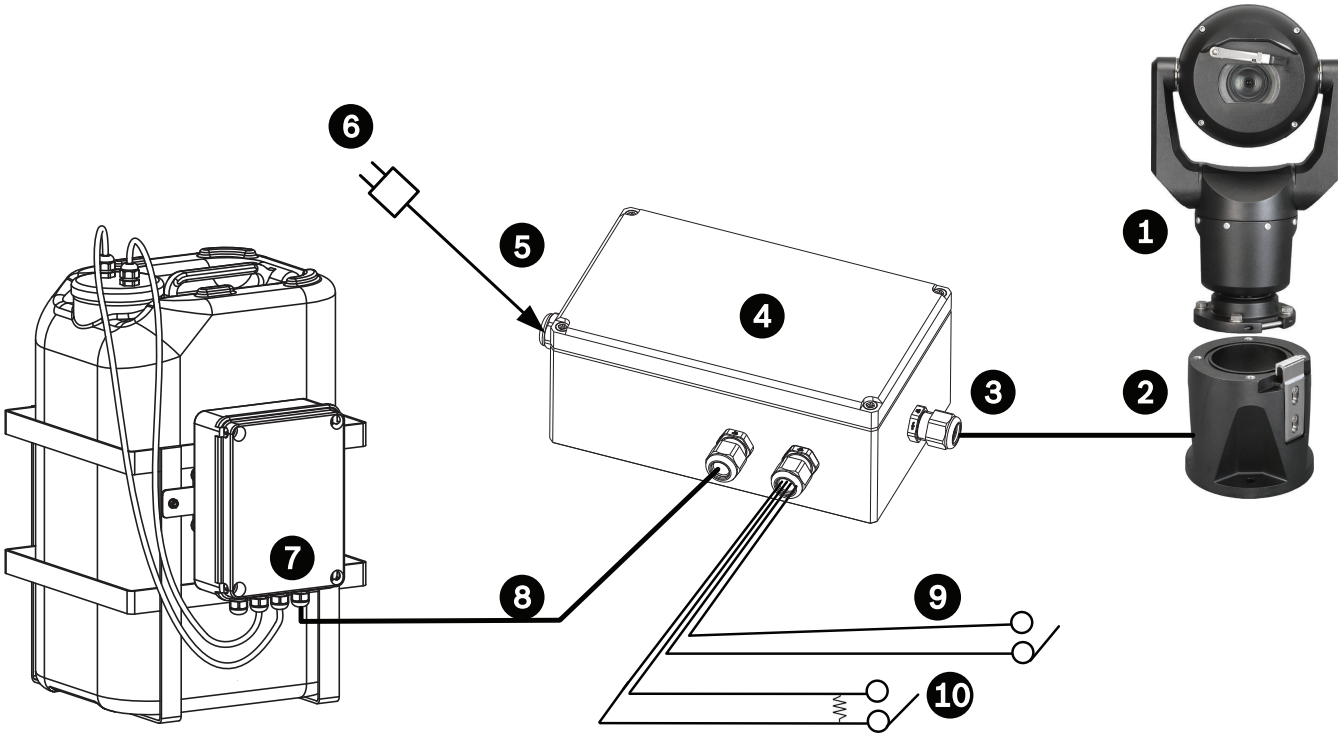


Figure 12.2: Typical configuration with MIC-ALM-WAS-24

1	MIC7000 camera	6	24 VAC Power pack, 1A, 50/60 Hz (user-supplied)
2	MIC Hinged DCA (MIC-DCA-Hx)	7	Washer pump accessory
3	RS-485 cable, 3-conductor (user-supplied)	8	Interface cable for washer control (user-supplied)
4	MIC-ALM-WAS-24 enclosure	9	Alarm input / output interface cables (user-supplied)
5	Interface cable for 24 VAC (user-supplied) for MIC-ALM-WAS-24	10	Monitored switch for Tamper Alarm (user-supplied)

12.3 Typical IP Configuration with VJC-7000-90

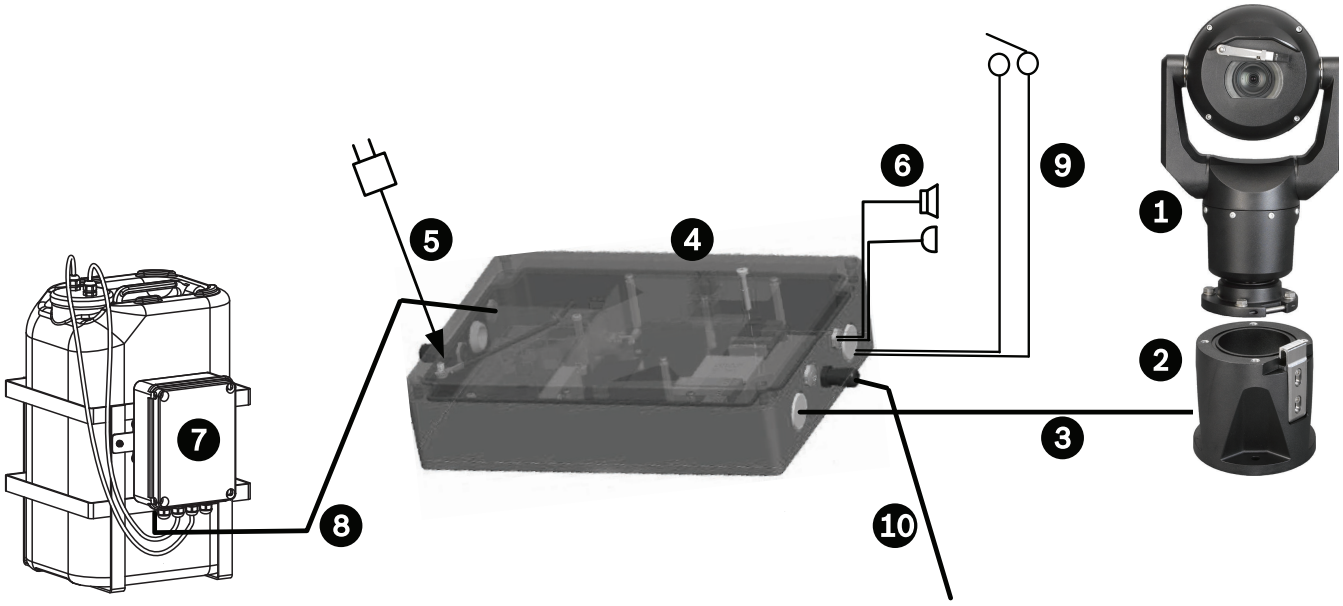


Figure 12.3: Typical IP configuration with VJC-7000-90

1	MIC7000 camera	6	Audio input / output interface cables (user-supplied)
2	MIC Hinged DCA (MIC-DCA-Hx)	7	Washer pump accessory
3	High PoE (Network) cable) (user-supplied) between camera and VJC-7000-90	8	Washer output, 2-conductor (user-supplied)
4	VJC-7000-90	9	Alarm input / output interface cables (user-supplied)
5	120 / 230 VAC	10	Data-only IP cable (Cat5e/Cat6 or fiber) to head-end network

Note: The total length of Cat5e/Cat6 cable must be less than 100 m (328 ft) between the camera and the head-end system.

13 Configuration

13.1 System Requirements

The camera requires specific software and hardware to allow a user to view live images and to configure camera settings over a TCP/IP network. These requirements are:

- A computer with the Microsoft Windows XP, Vista, or Windows 7 operating system, network access, and the Microsoft Internet Explorer Web browser version 8.0 or later, or
- A computer with Microsoft Windows XP, Vista, or Windows 7 operating system, network access, and reception software such as the Bosch Video Management System or the Video Client, or other third party head-end video management software, or
- A compatible hardware decoder from Bosch Security Systems connected to a video monitor.

Notice!

The Web browser must be configured to enable Cookies to be set from the IP address of the unit.

In Windows 7, deactivate protected mode on the Security tab under Internet Options. You can find notes on using Microsoft Internet Explorer in the online Help in Internet Explorer. In Windows Vista, deactivate protected mode on the Security tab under Internet Options.

You can find notes on using Microsoft Internet Explorer in the online Help in Internet Explorer.

If you choose to use a computer running Microsoft Internet Explorer or any of the Bosch software, the computer must conform to the following minimum requirements:

- Operating System: Windows XP (Service Pack 3) or Windows 7 (32 or 64 bits)
- Processor: Intel Pentium Quad Core, 3.0 GHz or comparable
- RAM: 2048 MB
- Free Hard Disk Space: 10 GB
- Video system: NVIDIA GeForce 8600 or higher display with a minimum of 16-bit color
- Network interface: 100/1000-BaseT
- Software:
  - Microsoft Internet Explorer, version 8.0 or higher
  - Video Client
  - DirectX 9.0c
  - Oracle Java Virtual Machine 1.6.0_26 or newer

The camera includes the means to decode the video via a web browser; however, for more advanced features such as local recording to PC, snapshot, and full screen display, you must obtain MPEG-ActiveX.

For the latest versions of the Video Client, DirectX, Oracle Java Virtual Machine, and MPEG-ActiveX software, go to *www.boschsecurity.com*, navigate to the product page for your camera, and then download the software from the Software tab.

Notice!

Ensure that the graphics card is set to 16-bit or 32-bit color. If you need further assistance, contact your PC system administrator.

13.2 Configuring the Camera

To operate the camera in your network, you must configure the camera properly for your network. You will need the following information:

– Unit IP address: An identifier for the camera on a TCP/IP network.
  Default: 192.168.0.1 (if your network does not have a DHCP server)
  or
  the first available IP address (if your network has a DHCP server)
  Note: You will likely need to change the IP address of your camera so that it does not conflict with another device on your network. Refer to *Basic Mode: Network, page 43* for more information.
– Subnet mask: A mask used to determine what subnet an IP address belongs to.
  Default: 255.255.255.0
– Gateway IP address: A node on a network that serves as an entrance to another network.
  Default: 0.0.0.0
– Port: An endpoint to a logical connection in TCP/IP and UDP networks. The port number identifies the use of the port for use through a firewall connection.

Notice!
Ensure that the network parameters of your camera are available before you begin configuration. Contact your local network administrator for a valid IP address, Subnet mask, and Gateway IP address.

The following sections provide instructions about installing the software necessary to view images over an IP connection, configuring the IP network settings, and accessing the camera images from a Web browser.
To change the IP address or any network settings, you can use:

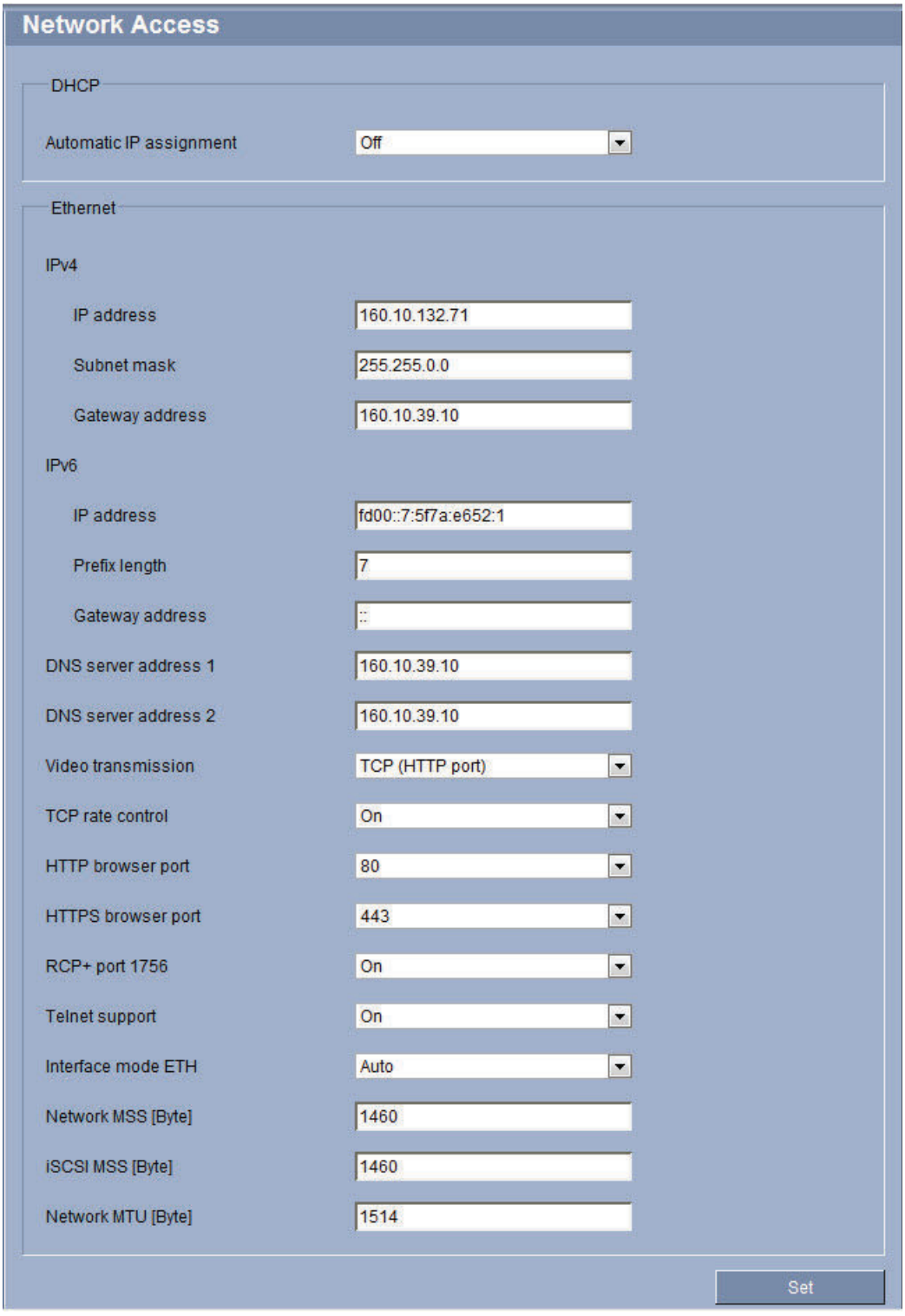
– the Configuration Manager software or
– the MIC7000 Series server.

13.2.1 Using the Configuration Manager

Configuration Manager is an optional network utility provided on the Bosch Security Systems Web site. Use the Configuration Manager Manual to make any configuration changes.
Note: Depending on the PC network security settings, the user may need to add the new IP address to the browser's trusted sites list for the controls to operate.

13.2.2 Using the MIC7000 Series Web Server

1. Set the IP address on the network device to 192.168.0.10 to ensure that the network device and the MIC7000 camera are on the same Subnet.
2. Launch your web browser (such as Microsoft Internet Explorer) and navigate to the following URL: http://192.168.0.1
The web browser opens the **LIVE** page for the MIC7000 camera; a security warning message is displayed.
3. Check the Always Trust Box, and then click YES.
4. Click the SETTINGS link at the top of the **LIVE** page.
5. In the left pane of the window, click Advanced Mode, and then click Network. The Network menu expands.
6. Click Network Access to open the Network Access page.



7. Configure the settings on this page based on the addresses provided by your local network administrator. Note that the text on the Set button changes to Set and Reboot.
8. Click Set and Reboot. The camera will reset (go through the homing sequence, which usually takes 30 seconds to complete), and then the **LIVE** page appears, with updated video and the new IP address.

Notice!
Click the **Help on this page?** link if you need more information.

NOTE: Screenshots of configuration settings in this manual are from a MIC 7130 model. Because of firmware or software updates, the screenshots may differ slightly from the configuration settings screens in your system. Every effort has been made to ensure that the information in this manual is accurate and current.

13.2.3 About the SETTINGS Page

About the SETTINGS Page
The **SETTINGS** page provides access to the configuration menu, which contains all the unit's parameters arranged in groups. You can view the current settings by opening one of the configuration screens. You can change the settings by entering new values or by selecting a predefined value from a list field.
There are two options for configuring the unit or checking the current settings:
– Basic mode
– Advanced mode
In **Basic Mode,** the most important parameters are arranged in seven groups. This allows you to change the basic settings with just a few entries and then put the device into operation.
Advanced Mode is recommended for expert users or system support personnel. You can access all unit parameters in this mode. Settings that affect the fundamental functionality of the unit (such as firmware updates) can only be altered in the advanced mode.

Caution!
The settings in the Advanced Mode should only be processed or modified by expert users or system support personnel.

All settings are backed up in camera memory so they are not lost even if the power fails. The exception is the time settings, which are lost after 1 hour without power if no central time server is selected.

Starting Configuration
- Click the **SETTINGS** link in the upper section of the window. The Web browser opens a new page with the configuration menu.

Navigation
1. Click one of the menu items in the left window margin. The corresponding submenu is displayed.
2. Click one of the entries in the submenu. The web browser opens the corresponding page.

Making Changes
Each configuration screen shows the current settings. You can change the settings by entering new values or by selecting a predefined value from a list field.
Not every page has a Set button. Changes to pages without a Set button are set immediately. If a page does show a Set button, you must click the Set button for a change to take effect.

Caution!
Save each change with the associated **Set** button.
Clicking the **Set** button saves the settings only in the current field. Changes in any other fields are ignored.

Some changes only take effect after the unit is rebooted. In this case, the **Set** button changes to **Set and Reboot**.

1. Make the desired changes.
2. Click the **Set and Reboot** button. The camera reboots and the changed settings are activated.

13.3 Configuring Audio (Optional)

Note for MIC7000 cameras only: These options are available only if you have connected a VIDEOJET connect device (VJC-7000-90) to your camera.

Enabling Audio Transmission

To transmit audio via the IP connection, follow these steps:

1. Open the **LIVE** page, and then click the **Settings** tab.
2. In the left pane, click **Advanced**, and then click **Web Interface**. The Web Interface menu expands.
3. Click **LIVE Functions**. The **LIVE Functions** page appears.
4. Click the **Transmit Audio** radio button to enable for audio.

Activating Audio Reception

To configure audio via the Web browser, follow these steps:

1. Open the **LIVE** page, and then click the **Settings** tab.
2. In the left pane, click **Advanced Mode**, and then click **Camera**. The Camera menu expands.
3. Click **Audio**. The Audio page appears. The page displays the current video image in the small window next to the slide controls to help you verify the audio source and improve the Peak levels.
4. Select the protocol in the **Audio** field to activate audio over IP. (Change the option to ON.)

Notice!

The audio signal is sent in a separate data stream parallel to the video data, and so increases the network load. The audio data is encoded according to G.711 or L16 and requires an additional bandwidth of approximately 80 Kbit/s for each connection.

5. If you wish to configure the input and output gain of the audio signals, set the Line In and Line Out fields to suit your specific requirements. Changes are effective immediately. The current level is displayed next to the slide control to help do this. Make sure that the display does not go beyond the green zone during modulation.

For more information, refer to *Audio, page 64*.

14 Configuration via IP, Basic Mode

14.1 Basic Mode: Device Access

Camera name
You can give the camera a name to make it easier to identify. The name makes the task of administering multiple units in larger video monitoring systems easier, for example using the Bosch Video Management Systems programs.
The device name is used for the remote identification of a unit, in the event of an alarm for example. For this reason, enter a name that makes it as easy as possible to quickly identify the location.

Caution!
Do not use any special characters, for example **&**, in the name.
Special characters are not supported by the system's internal recording management and may therefore result in the Player or Archive Player being unable to play back the recording.

Password
The camera is generally protected by a password to prevent unauthorized access to the unit. You can use different authorization levels to limit access.
The camera operates with three authorization levels: service, user and live.
The highest authorization level is service. After entering the correct password, you can access all the functions of the camera and change all configuration settings.
With the user authorization level, you can operate the unit and also control cameras, for example, but you cannot change the configuration.
The lowest authorization level is live. It can only be used to view the live video image and switch between the different live image displays.
You can define and change a password for each authorization level if you are logged in as service or if the unit is not password protected.
Enter the password for the appropriate authorization level here.
Note: Proper password protection is only guaranteed when all higher authorization levels are also protected with a password. If a live password is assigned, for example, a service and a user password must also be set. When assigning passwords, you should therefore always start from the highest authorization level, service, and use different passwords.

Confirm password
In each case, enter the new password a second time to eliminate typing mistakes.

Notice!
A new password is only saved when you click the **Set** button. You should therefore click the **Set** button immediately after entering and confirming a password.

14.2 Basic Mode: Date/Time

Device date/Device time/Device time zone
If there are multiple devices operating in your system or network, it is important to synchronize their internal clocks. For example, it is only possible to identify and correctly evaluate simultaneous recordings when all units are operating on the same time. If necessary, you can synchronize the unit with your computer's system settings.

Notice!
Ensure that recording is stopped before synching to the PC.

- Click the **Sync to PC** button to copy your computer's system time to the camera.

Time server IP address
The camera can receive the time signal from a time server using various time server protocols, and then use it to set the internal clock. The unit polls the time signal automatically once every minute.

- Enter the IP address of a time server here.

Time server type
Select the protocol that is supported by the selected time server. Preferably, you should select the **SNTP server** as the protocol. This supports a high level of accuracy and is required for special applications and subsequent function extensions.
Select **Time server** for a time server that works with the protocol RFC 868.

14.3 Basic Mode: Network

The settings on this page are used to integrate the camera into an existing network.
Some changes only take effect after the unit is rebooted. In this case, the **Set** button changes to **Set and Reboot**.

1. Make the desired changes.
2. Click the **Set and Reboot** button. The camera reboots and the changed settings are activated.

Note: If you change the IP address, subnet mask or gateway address, the camera is only available under the new addresses after the reboot.

DHCP
If a DHCP server is employed in the network for the dynamic assignment of IP addresses, you can activate acceptance of IP addresses automatically assigned to the camera. Certain applications (VIDOS, Bosch Video Management Systems, Archive Player, Configuration Manager) use the IP address for the unique assignment of the unit. If you use these applications, the DHCP server must support the fixed assignment between IP address and MAC address, and must be appropriately set up so that, once an IP address is assigned, it is retained each time the system is rebooted.

IP address
Enter the desired IP address for camera in this field. The IP address must be valid for the network.

Subnet mask
Enter the appropriate subnet mask for the selected IP address here.

Gateway address
If you want the unit to establish a connection to a remote location in a different subnet, enter the IP address of the gateway here. Otherwise leave the box as **0.0.0.0**.

14.4 Basic Mode: Encoder

Non-recording profile
You can select a profile for encoding the video signal.
You can use this to adapt the video data transmission to the operating environment (for example, network structure, bandwidth, data load).

Pre-programmed profiles are available, each giving priority to different perspectives. When selecting a profile, details are displayed in the list field.

Default Profile name	Description
HD Image Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
HD Balanced	For an HD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
HD Bit Rate Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
SD Image Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
SD Balanced	For an SD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
SD Bit Rate Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
DSL Optimized	Ideal for encoding on a DSL uplink where bit rate limitations are critical.
3G Optimized	Ideal for encoding on a 3G uplink where bit rate limitations are critical.

14.5 Basic Mode: Audio

Note for MIC7000 cameras only: These options are available only if you have connected a VIDEOJET connect device (VJC-7000-90) to your camera.
You can set the gain of the audio signals to suit your specific requirements. The current video image is shown in the small window next to the slide controls to help you check the audio source and improve assignments. Your changes are effective immediately.
If you connect via Web browser, you must select the option **Transmit Audio** on the **LIVE Functions** page. (See *LIVE Functions, page 50*). For other connections, the transmission depends on the audio settings of the respective system.

Audio
The audio signals are sent in a separate data stream parallel to the video data, and so increase the network load. The audio data are encoded according to G.711 and require an additional bandwidth of approx. 80 kbps per connection in each direction. If you do not want any audio data to be transmitted/received, select **Off**.

Line In
You can set the line input gain using the slider. Values range from 0 to 31. The default value is 0.

Line Out
You can set the line output gain using the slider. Values range from 0 to 79. The default value is 0.

14.6 Basic Mode: Recording

You can record the images from the camera on various local storage media or on an appropriately configured iSCSI system.

Storage medium

1. Select the required storage medium from the list.
2. Click the **Start** button to start the recording immediately.

14.7 Basic Mode: System Overview

The data on this page are for information purposes only and cannot be changed. Keep a record of this information in case technical assistance is required.

Notice!

You can select all required text on this page with the mouse and copy it to the clipboard with the [Ctrl]+[C] key combination, for example if you want to send it via e-mail.

15 Configuration via IP, Advanced Mode

15.1 Advanced Mode: General

Identification, page 46
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Display Stamping, page 48

15.2 Identification

Camera name

The camera name makes it easier to identify the remote camera location, in the event of an alarm for example. It will be displayed in the video screen if configured to do so. The camera name makes the task of administering cameras in larger video monitoring systems easier, for example using the BVC or Bosch Video Management Systems Programs.

Enter a unique, unambiguous name for the camera in this field. You can use both lines for this. Do not use any special characters, for example **&**, in the name. Special characters are not supported by the system's internal management.

You can use the second line for entering additional characters; these can be selected from a table.

1. Click the icon next to the second line. A new window with the character map is opened.
2. Click the required character. The character is inserted into the **Result** field.
3. In the character map, click the **<<** and **>>** icons to move between the different pages of the table, or select a page from the list field.
4. Click the **<** icon to the right of the **Result** field to delete the last character, or click the **X** icon to delete all characters.
5. Now click the **OK** button to apply the selected characters to the second line of the **Camera 1** parameters. The window will close.

Camera ID

Each device should be assigned a unique identifier that can be entered here as an additional means of identification.

Initiator extension

Add text to an initiator name to make identification easier in large iSCSI systems. This text is added to the initiator name, separated from it by a full stop. (You can see the initiator name in the System Overview page.)

15.3 Password

The camera is generally protected by a password to prevent unauthorized access to the unit. You can use different authorization levels to limit access.

Notice!

Proper password protection is only guaranteed when all higher authorization levels are also protected with a password. If a **live** password is assigned, for example, a **service** and a **user** password must also be set. When assigning passwords, you should therefore always start from the highest authorization level, **service**, and use different passwords.

Password

The camera operates with three authorization levels: **service**, **user** and **live**.

The highest authorization level is **service**. After entering the correct password, you can access all the functions of the camera and change all configuration settings.

With the **user** authorization level, you can operate the unit and also control cameras, for example, but you cannot change the configuration.
The lowest authorization level is **live**. It can only be used to view the live video image and switch between the different live image displays.
You can define and change a password for each authorization level if you are logged in as **service** or if the unit is not password protected.
Enter the password for the appropriate authorization level here.

Confirm password
In each case, enter the new password a second time to eliminate typing mistakes.

Notice!
A new password is only saved when you click the **Set** button. You should therefore click the **Set** button immediately after entering and confirming a password.

15.4 Date/Time

Date format
Select your required date format.

Device date/Device time

Notice!
Ensure that recording is stopped before synching to the PC.

If there are multiple devices operating in your system or network, it is important to synchronize their internal clocks. For example, it is only possible to identify and correctly evaluate simultaneous recordings when all units are operating on the same time.

1. Enter the current date. Since the unit time is controlled by the internal clock, there is no need to enter the day of the week – it is added automatically.
2. Enter the current time or click the **Sync to PC** button to copy your computer's system time to the camera.

Note: It is important that the date/time is correct for recording. An incorrect date/time setting could prevent correct recording.

Device time zone
Select the time zone in which your system is located.

Daylight saving time
The internal clock can switch automatically between normal and daylight saving time (DST). The unit already contains the data for DST switch-overs up to the year 2018. You can use these data or create alternative time saving data if required.

Notice!
If you do not create a table, there will be no automatic switching. When changing and clearing individual entries, remember that two entries are usually related to each other and dependent on one another (switching to summer time and back to normal time).

1. First check whether the correct time zone is selected. If it is not correct, select the appropriate time zone for the system, and click the **Set** button.
2. Click the **Details** button. A new window will open and you will see the empty table.

3. Select the region or the city that is closest to the system's location from the list field below the table.
4. Click the **Generate** button to generate data from the database in the unit and enter it into the table.
5. Make changes by clicking an entry in the table. The entry is selected.
6. Clicking the **Delete** button will remove the entry from the table.
7. Select other values from the list fields below the table to change the entry. Changes are made immediately.
8. If there are empty lines at the bottom of the table, for example after deletions, you can add new data by marking the row and selecting required values from the list fields.
9. Now click the **OK** button to save and activate the table.

Time server IP address
The camera can receive the time signal from a time server using various time server protocols, and then use it to set the internal clock. The unit polls the time signal automatically once every minute.
Enter the IP address of a time server here.

Time server type
Select the protocol that is supported by the selected time server. Preferably, you should select the **SNTP server** as the protocol. This supports a high level of accuracy and is required for special applications and subsequent function extensions.
Select **Time server** for a time server that works with the protocol RFC 868.

15.5 Display Stamping

Various overlays or “stamps” in the video image provide important supplementary information. These overlays can be enabled individually and are arranged on the image in a clear manner. After you set all necessary parameters, click the **View Control** link to see how the stamping appears on the **LIVE** page.

Camera name stamping
This field sets the position of the camera name overlay. It can be displayed at the **Top**, at the **Bottom** or at a position of your choice that you can then specify using the **Custom** option. Or it can be set to **Off** for no overlay information.
1. Select the desired option from the list.
2. If you select the **Custom** option, additional fields are displayed where you can specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

Time stamping
This field sets the position of the time overlay. It can be displayed at the **Top**, at the **Bottom** or at a position of your choice that you can then specify using the **Custom** option. Or it can be set to **Off** for no overlay information.
1. Select the desired option from the list.
2. If you select the **Custom** option, additional fields are displayed where you can specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

Display milliseconds
If necessary, you can also display milliseconds. This information can be useful for recorded video images; however, it does increase the processor's computing time. Select **Off** if you do not need to display milliseconds.

Alarm mode stamping
Select **On** to display a text message overlay in the image in the event of an alarm. It can be displayed at a position of your choice that you can then specify using the **Custom** option. Or it can be set to **Off** for no overlay information.
1. Select the desired option from the list.
2. If you select the **Custom** option, additional fields are displayed where you can specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

Alarm message
Enter the message to be displayed in the image in the event of an alarm. The maximum text length is 31 characters.

Title OSD
Select **On** to continuously display sector or shot title overlays in the image. Select **Momentary** to display sector or shot title overlays for a few seconds. OSD titles can be displayed at a position of your choice, or it can be set to **Off** for no overlay information.
1. Select the desired option from the list.
2. Specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

Camera OSD
Select **On** to momentarily display camera response information, such as Digital Zoom, Iris open/close, and Focus near/far overlays in the image. Select **Off** to display no information.
1. Select the desired option from the list.
2. Specify the exact position (**Position (XY)**).
3. In the **Position (XY)** fields, enter the values for the desired position.

Transparent stamping
Check this box to make the stamp on the image transparent.

Video watermarking
Choose **On** if you wish the transmitted video images to be “watermarked”. After activation, all images are marked with a green check. A red check indicates that the sequence (live or saved) has been manipulated.

Video authentication
Select a method for verifying the integrity of the video in the **Video authentication** drop-down box.
If you select **Watermarking** all images are marked with an icon. The icon indicates if the sequence (live or saved) has been manipulated.
If you want to add a digital signature to the transmitted video images to ensure their integrity, select one of the cryptographic algorithms for this signature.
Enter the interval (in seconds) between insertions of the digital signature.

15.6 Advanced Mode: Web Interface

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15.7 Appearance

On this page you can adapt the appearance of the web interface and change the website language to meet your requirements. If necessary, you can replace the manufacturer's logo (top right) and the product name (top left) in the top part of the window with individual graphics.

Notice!

You can use either GIF or JPEG images. The file paths must correspond to the access mode (for example **C:\Images\Logo.gif** for access to local files, or **http://www.mycompany.com/images/logo.gif** for access via the Internet/Intranet).
When accessing via the Internet/Intranet, ensure that a connection is always available to display the image. The image file is not stored in the camera.

Website language
Select the language for the user interface here.

Company logo
Enter the path to a suitable graphic if you want to replace the manufacturer's logo. The image file can be stored on a local computer, in the local network or at an Internet address.

Device logo
Enter the path to a suitable graphic if you want to replace the product name. The image file can be stored on a local computer, in the local network or at an Internet address.

Notice!

If you want to use the original graphics again, simply delete the entries in the **Company logo** and **Device logo** fields.

Show VCA metadata
When video content analysis (VCA) is activated, additional information is displayed in the live video stream. For example, in Motion+ mode, the sensor areas for motion detection are marked.

Show VCA trajectories
When video content analysis (VCA) is activated, check this item to show additional information that traces the path of objects.

Show overlay icons
Select this checkbox to show overlay icons on the live video image.

Video player
Select the desired video player from the list in the drop-down box. Options are “Auto detect” (default), Bosch Video SDK, Bosch Autoload Decoder, JPEG

JPEG size
You can specify the size of the JPEG image on the **LIVE** page. Options are Small, Medium, Large, 720p, 1080p, and “Best possible” (default).

JPEG interval
You can specify the interval at which the individual images should be generated for the M-JPEG image on the **LIVE** page.

JPEG quality
You can specify the quality at which the JPEG images appear on the **LIVE** page.

15.8 LIVE Functions

On this page you can adapt the functions on the **LIVE** page to your requirements. You can choose from a variety of different options for displaying information and controls.

1. Check the box for the items that are to be made available on the **LIVE** page. The selected items are indicated by a check mark.
2. Check whether the required functions are available on the **LIVE** page.

Transmit audio
You can only select this option if audio transmission is actually switched on (see *Audio, page 64*).The audio signals are sent in a separate data stream parallel to the video data, and so increase the network load. The audio data are encoded according to G.711 and require an additional bandwidth of approx. 80 kbps per connection in each direction.

Lease time (s)
The lease time in seconds determines the time beyond which a different user is authorized to control the camera after no further control signals are received from the current user. After this time interval, the camera is automatically enabled.

Show alarm inputs
The alarm inputs are displayed next to the video image as icons along with their assigned names. If an alarm is active, the corresponding icon changes color.

Show alarm outputs
Alarm outputs are shown next to the video image as icons, along with their assigned names. If the alarm output is active, the corresponding icon changes color.

Show event log
The event messages are displayed along with the date and time in a field next to the video image.

Show system log
The system messages are displayed along with the date and time in a field next to the video image and provide information about establishing and ending connections, for example.

Allow snapshots
Here you can specify whether the icon for saving individual images (snapshots) should be displayed below the live image. Individual images can only be saved if this icon is visible.

Allow local recording
Here you can specify whether the icon for saving (recording) video sequences on the local memory should be displayed below the live image. Video sequences can only be saved if this icon is visible.

I-frames only stream
Here you can specify whether the **LIVE** page displays a viewing tab for an I-frame only stream.

Show scene list
Here you can specify whether the View Controls section of the **LIVE** page displays a drop-down box with the list of scenes set in Advanced Mode > Camera > Scenes and Tours of the **SETTINGS** page.

Show 'Intelligent Tracking'
Here you can specify whether the **LIVE** page displays the controls for the Intelligent Tracking feature.

Show 'Special Functions'
Here you can specify whether the **LIVE** page displays the Special Functions section.

Path for JPEG and video files
1. Enter the path for the storage location of individual images and video sequences that you can save from the **LIVE** page.
2. If necessary, click **Browse** to find a suitable directory.

15.9 Logging

Save event log
Check this option to save event messages in a text file on your local computer. You can then view, edit and print this file with any text editor or the standard Office software.

File for event log

1. Enter the path for saving the event log here.
2. If necessary, click **Browse** to find a suitable directory.

Save system log

Check this option to save system messages in a text file on your local computer. You can then view, edit and print this file with any text editor or the standard Office software.

File for system log

1. Enter the path for saving the system log here.
2. If necessary, click **Browse** to find a suitable directory.

15.10 Advanced Mode: Camera

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15.11 Installer Menu

Application Variant

If you are connecting to a MIC-ALM-WAS-24 or to a VJC-7000-90, select “MIC 7x30 – IO” to allow the camera to recognize additional inputs and outputs from either device. Otherwise, select “MIC 7x30.”

Base frame rate

This option allows you to set the frame rate that the camera uses to transmit video. Select either 25 ips or 30 ips. If you select 25 ips, the camera will stream video at 25 or 50 ips. If you select 30 ips, the camera will stream video at 30 or 60 ips, depending on the option selected in the Encoder Stream.

Max. frame rate

This option determines the maximum frame rate that the camera streams video. Select one of the following options:

Max. Frame Rate Option	Available Streaming Options
25/30 ips (up to 1920 x 1080)	H.264 MP 720p25/30 Fixed H.264 MP 1080p25/30 Fixed
50/60 ips (up to 1280 x 720)	H.264 MP 720p50/60 Fixed

Notice!

Changing the Base frame rate or Max. frame rate

A change to the Base frame rate or to the Max. frame rate parameter requires approximately 10-20 seconds to complete. During this time, no changes can be made. The cameo image freezes.

This section also displays a graphic that shows the relative image size difference between an image encoded at 1280 x 720 and at 1920 x 1080.
The orientation of the camera. Options: Normal, Inverted, Canted.

SC settings
Click the Default button to restore all camera settings to their original defaults.

SC data
Click the Default button to clear all prepositions, privacy masks, and other configuration settings defined in the camera's web server to their default values.

Reboot device
Click the Reboot button to reboot the camera. There is a ten (10) second pause before the camera starts its homing phase. During the homing phase, the camera will complete finding the upper and lower tilt limits.

Factory defaults
Click the **Defaults** button to restore the configuration settings defined in the camera's web server to their default values. A confirmation screen appears. Allow 5 seconds for the camera to optimize the picture after a mode reset.

15.12 Encoder Profile

For the video signal encoding, you can select a code algorithm and you can change the presets for the profiles.
You can adapt the video data transmission to the operating environment (for example network structure, bandwidth, data load). To this end, the camera simultaneously generates two data streams (Dual Streaming), which compression settings you can select individually, for example one setting for transmissions to the Internet and one for LAN connections.
Pre-programmed profiles are available, each giving priority to different perspectives.
You can change individual parameter values of a profile and you can also change the name.
You can switch between profiles by clicking the appropriate tabs.
Note: In the default setting, Stream 1 is transmitted for alarm connections and automatic connections.

Notice!
All parameters combine to make up a profile and are dependent on one another. If you enter a setting that is outside the permitted range for a particular parameter, the nearest permitted value will be substituted when the settings are saved.

Profile name

Default Profile name	Description
HD Image Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
HD Balanced	For an HD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
HD Bit Rate Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
SD Image Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
SD Balanced	For an SD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.

Default Profile name	Description
SD Bit Rate Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
DSL Optimized	Ideal for encoding on a DSL uplink where bit rate limitations are critical.
3G Optimized	Ideal for encoding on a 3G uplink where bit rate limitations are critical.

If required, enter a new name for the profile.

Target bit rate
To optimize use of the bandwidth in the network, limit the data rate for the device. The target data rate should be set according to the desired picture quality for typical scenes with no excessive motion.
For complex images or frequent changes of image content due to frequent movements, this limit can temporarily be exceeded up to the value entered in the **Maximum bit rate** field.

Maximum bit rate
This maximum bit rate is not exceeded under any circumstances. Depending on the video quality settings for the I- and P-frames, this fact can result in individual images being skipped. The value entered here must be at least 10% higher than the value entered in the **Target bit rate** field. If the value entered here is too low, it will be adjusted automatically.

Encoding interval
This parameter determines the interval at which images are encoded and transmitted. For example, entering or selecting 4 means that only every fourth image is encoded, while the following there are skipped, which can be particularly advantageous for networks with low bandwidths. The image rate in (images per second (ips) appears next to the text field or slider.

Video resolution
Select the desired resolution for the video image.

Expert settings
If necessary, use the expert settings to adapt the I-frame quality and the P-frame quality to specific requirements. The setting is based on the H.264 quantization parameter (QP).

GOP structure
Select the structure that you require for the group of pictures, depending on whether you place greater priority on having the lowest possible delay (IP frames only) or using as little bandwidth as possible.
Options are IP, IBP, and IBBP.

I-frame distance
This parameter allows you to set the intervals in which the I-frames will be coded. Auto means auto mode, whereby the video server inserts I-frames as necessary. Values range from 3 to 60. An entry of 3 indicates that I-frames are continuously generated. An entry of 4 indicates that only every fourth image is an I-frame, and so on; the frames in between are coded as P-frames. Note that the values supported depend on the GOP structure setting. For example, only even values are supported with IBP; if you have selected IBBP, only 3 or multiples of 3 are supported.

Min. P-frame QP
This parameter allows you to adjust the image quality of the P-frame and to define the lower limit for the quantization of the P-frames, and thus the maximum achievable quality of the P-frames. In the H.264-protocol, the Quantization Parameter (QP) specifies the degree of

compression and thus the image quality for every frame. The lower the quantization of the P-frame (QP value), the higher the encoding quality (and thus the best image quality) and the lower the frame refresh rate depending on the settings for the maximum data rate under network settings. A higher quantization value results in low image quality and lower network load. Typical QP values are between 18 and 30.
The basic setting Auto automatically adjusts the quality to the settings for the P-frame video quality.

I/P-frame delta QP
This parameter sets the ratio of the I-frame quantization (QP) to the P-frame quantization (QP). For example, you can set a lower value for I-frames by moving the slide control to a negative value. Thus, the quality of the I-frames relative to the P-frames is improved. The total data load will increase, but only by the portion of I-frames. The basic setting Auto automatically adjusts to the optimum combination of movement and image definition (focus). To obtain the highest quality at the lowest bandwidth, even in the case of increased movement in the picture, configure the quality settings as follows:

1. Observe the coverage area during normal movement in the preview images.
2. Set the value for **Min. P-frame QP** to the highest value at which the image quality still meets your needs.
3. Set the value for **I/P-frame delta QP** to the lowest possible value. This is how to save bandwidth and memory in normal scenes. The image quality is retained even in the case of increased movement since the bandwidth is then filled up to the value that is entered under **Maximum bit rate**.

Default
Click **Default** to return the profile to the factory default values.

15.13 Encoder Streams

Property
Select one of the H.264 standards for each stream.

Stream 1 (recording)	Options are: - H.264 MP SD - H.264 MP 720p25/30 Fixed - H.264 MP 1080p25/30 Fixed; - H.264 MP 720p50/60 Fixed

Note: In order to select the option “H.264 MP 720p50/60 Fixed” here, you must set the **Max. frame rate** field in the Advanced Mode: Camera >Installer Menu to “H.264 MP 720p50/60 Fixed” first.

Stream 2 (recording)	Options vary depending on Stream 1 selection. Options with “H.264 MP 1080p25/30 Fixed” selected for Stream 1: - Copy Stream 1; - H.264 MP SD; - H.264 MP 720p8/10 Fixed; - H.264 MP 1080p4/5 Fixed; - H.264 MP upright (cropped); - H.264 MP D1 4:3 (cropped); Options with “H.264 MP 720p25/30 Fixed” selected for Stream 1: - H.264 MP SD; - H.264 MP 720p25/30 Fixed; - H.264 MP upright (cropped); - H.264 MP D1 4:3 (cropped); - H.264 MP 1280x960 (cropped) Option with “H.264 MP SD” selected for Stream 1: H.264 MP SD

Non-recording profile

Select one of the following profiles for each stream:

Default Profile name	Description
HD Image Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
HD Balanced	For an HD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
HD Bit Rate Optimized	For an HD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
SD Image Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
SD Balanced	For an SD image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
SD Bit Rate Optimized	For an SD image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
DSL Optimized	Ideal for encoding on a DSL uplink where bit rate limitations are critical.
3G Optimized	Ideal for encoding on a 3G uplink where bit rate limitations are critical.

Note: Non-recording profiles (streams) are I-frame only.

Preview

Click the **Preview** button to open a small static preview window for each stream. To enlarge the preview and view live video, click the **1:1 Live View** button.

JPEG stream

Select the resolution, frame rate, and image quality parameters for the M-JPEG stream.

– **Resolution**: Select the appropriate resolution.

- **Max. frame rate**: Select one of the following frame rates to be the maximum: 5, 10, 15, 20, 25, or 30 ips.
- **Picture quality**: This setting allows you to adjust the image quality. Use the slide bar to choose a quality between Low and High.

Note: The M-JPEG frame rate can vary depending on system loading.

15.14 Privacy Masks

Privacy Masking is used to block out a specific area of a scene from being viewed. Masks can be configured as a gray area with four corners. You may define a total of 24 privacy masks.
To add a privacy mask to a scene:

1. Navigate to the scene in which you want to apply a privacy mask.
   Click the View Control link.
   Use the PTZ controls to view the scene.
2. Select the privacy mask number to apply to the scene.
3. The preview window displays a gray rectangle in the scene.
4. Click the Enabled check box to activate the privacy mask.
5. The privacy mask in the preview window changes to orange to indicate that the mask will appear in the video streams on the **LIVE** page.
6. Place the cursor inside the privacy mask area in the preview window; then click and drag to move the privacy mask.
7. Place the cursor on a corner or on a vertex of the mask rectangle; then click and drag to expand or shrink the privacy mask area.
8. Click Set to save the privacy mask size and position.
   An image window displays the privacy mask.
9. To hide an individual mask, select the mask number and clear the Enabled check box.
10. To hide all masks from an image view, click the Disable Masks check box.
    Note: If you choose to hide all masks, you must enable each individual mask to show the mask in the scene.
11. To display IVA behind privacy masks, click the IVA behind masks check box.

Notice!
Draw the mask 10% larger than the object to ensure that the mask completely covers the object as the camera zooms in and out. Click the Zoom threshold box.
Draw the mask at 50% optical zoom or less for improved masking performance.

Notice!
The camera disables the Privacy Mask feature if the orientation of the camera is set to Inverted. Refer to Installer Menu for orientation settings.

Notice!
When MIC is canted, Privacy Masks should not be created for scene objects less than 2 m (6 feet) distance from camera.

15.15 Picture Settings

Current mode
Select one of the pre-programmed user modes, optimized with the best settings for a variety of typical applications, that best defines the environment in which the camera is installed.

- General – Default mode. Suitable for most applications.
- Low light – Optimized performance for scenes with low light level.
- Motion – Optimized to minimize motion artifacts, such as when monitoring traffic or fast-moving objects.
- Vibrant – Provides enhanced contrast, color reproduction, and sharpness.
- Illuminator – Optimized performance when using the MIC illuminator accessory.

Customize the mode, if necessary, for the specific requirements of the site by selecting different values for the fields below.
In this case, the name of the user mode changes to “Custom.”

White Balance
Adjusts the color settings to maintain the quality of the white areas of the image.

- **ATW**: allows the camera to continuously adjust color reproduction.
- **AWB Hold**: places the ATW on hold and saves the color settings.
- **Extended ATW** (default): allows the camera to constantly adjust for optimal color reproduction.
- **Manual**: Red and Blue gain can be manually set to a desired position.
- **Sodium Lamp Auto:** Automatically adjusts for sodium vapor light to restore objects to their original color.
- **Sodium Lamp:** Optimizes the sodium vapor light to restore objects to their original color.

Red Gain
The red gain adjustment offsets the factory white point alignment (reducing red introduces more cyan).

Blue Gain
The blue gain adjustment offsets the factory white point alignment (reducing blue introduces more yellow). It is only necessary to change the white point offset for special scene conditions.

Saturation
The percentage of light or color in the video image (HD only). Values range from 60% to 200%; the default is 110%.

Color hue
The degree of color in the video image (HD only). Values range from -14° to 14°; the default is 8°.

Gain control
Adjusts the automatic gain control (AGC).

- **AGC** (default): Automatically adjusts the gain to the lowest possible value needed to maintain a good picture.
- **Fixed**: no enhancement. This setting disables the Max. Gain Level option.
  If you select this option, the camera makes the following changes automatically:
  - **Night Mode**: switches to Color
  - **Auto Iris**: switches to Constant

Fixed Gain
Use the slide to select the desired number for fixed gain. The default is 2.

Maximum Gain Level
Controls the maximum value the gain can have during AGC operation. To set the maximum gain level, choose from:

- **Normal**
- **Medium**
- **High** (default)

AE-response speed
Select the speed of the response of auto exposure. Options are Super slow, Slow, Medium (default), Fast.

Sharpness
Adjusts the sharpness of the picture. To set the sharpness, use the slider to select a number. The default is 12.

Shutter Mode
- **Fixed**: The shutter mode is fixed to a selectable shutter speed.
- **AutoSensUp**: increases camera sensitivity by increasing the integration time on the camera. This is accomplished by integrating the signal from a number of consecutive video frames to reduce signal noise.
  If you select this option, the camera makes the following change automatically:
  - **Auto Iris**: switches to Constant
  - **Shutter**: is disabled

Shutter
Adjusts the electronic shutter speed (AES). Controls the time period for which light is gathered by the collecting device. The default setting is 1/60 second for NTSC and 1/50 for PAL cameras. The range of settings is from 1/1 to 1/10000.

Auto SensUP limit
This limits the integration time when Auto SensUP (Frame Integration) is active. The default is 1/4. The range of settings is from 1/4 to 1/30.

Shutter limit
The camera tries to hold this shutter value as long as sufficient ambient light is available in the scene.
Settings range from 1/1 to 1/10000. The default value is 1/2000 for all modes except 'Motion' (default 1/500).

Backlight compensation
Optimizes the video level for the selected area of the image. Parts outside this area may be underexposed or overexposed. Select On to optimize the video level for the central area of the image. The default setting is Off.

High Sensitivity
Adjusts the level of intensity or lux within the image (HD only). Select from Off or On.

Stabilization
Stabilization reduces camera shake in both the vertical and horizontal axis. The camera compensates for the movement of the image by up to 2% of the image size. This feature is ideal for cameras mounted on a pole or mast, or on another location that shakes frequently.
- **On** - Stabilization is always on.
- **Off** - Stabilization is disabled.
- **Auto** - Stabilization activates automatically when the camera detects vibration greater than the set threshold.

High dynamic range
Select On to activate wide dynamic range, which improves image reproduction in extreme high-contract scenes.
Select Off to deactivate the feature.

Night mode
Selects night mode (B/W) to enhance lighting in low light scenes. Select from the following options:
- **Monochrome**: Forces the camera to stay in Nigh Mode and transmit monochrome images.
- **Color**: The camera does not switch to Night Mode regardless of ambient light conditions.

– **Auto** (default): The camera switches out of Night Mode after the ambient light level reaches a pre-defined threshold.

Night mode threshold
Adjusts the level of light at which the camera automatically switches out of night mode (B/W) operation. Select a value between 10 and 55 (in increments of 5; default 30). The lower the value, the earlier the camera will switch to color mode.

Noise Reduction
Turns on the 2D and 3D noise reduction feature.

Noise Reduction Level
Adjusts the noise level to the appropriate level for shooting conditions. Select a value between 1 and 5.

Anti-fog
With the anti-fog mode feature, visibility can be improved significantly when viewing foggy or other low-contrast scenes.
– **On** - Anti-fog is always active.
– **Off** - Anti-fog is disabled.
– **Auto** - Anti-fog activates automatically as needed.

15.16 Lens Settings

Autofocus
Continuously adjusts the lens automatically to the correct focus for the sharpest picture.
– **One Push** (default; commonly called “Spot Focus”): activates the Auto Focus feature after the camera stops moving. Once focused, Auto Focus is inactive until the camera is moved again.
– Auto Focus: Auto Focus is always active.
– Manual: Auto Focus is inactive.

Focus polarity
– **Normal (default)**: focus controls operate normally.
– **Reverse**: focus controls are reversed.

Focus speed
Use the slider (from 1 to 8) to control how fast the Auto focus will readjust when the focus becomes blurred.

Auto iris
Automatically adjusts the lens to allow the correct illumination of the camera sensor. This type of lens is recommended for use where there are low light or changing light conditions.
– **Constant** (default): camera constantly adjusts to varying light conditions (default).
  If you select this option, the camera makes the following changes automatically:
  – **Gain Control**: switches to AGC.
  – **Shutter Speed**: switches to default.
– **Manual**: camera must be manually adjusted to compensate for varying light conditions.

Iris polarity
Capability to reverse the operation of the iris button on the controller.
– **Normal** (default): iris controls operate normally.
– **Reverse**: iris controls are reversed.

Auto iris level
Increases or decreases brightness according to the amount of light. Type a value between 1 and 15.

Maximum zoom speed
Controls the zoom speed.

Zoom polarity
Capability to reverse the operation of the zoom button on the controller.
– **Normal** (default): zoom controls operate normally.
– **Reverse**: zoom controls are reversed.

Digital zoom
Digital zoom is a method of decreasing (narrowing) the apparent angle of view of a digital video image. It is accomplished electronically, without any adjustment of the camera's optics, and no optical resolution is gained in the process. Select Off to disable or On to enable this feature. The default setting is On.

15.17 PTZ Settings

Auto pan speed
Continuously pans the camera at a speed between right and left limit settings. Type a value between 1 and 60 (expressed in degrees), inclusive. The default setting is 30.

Inactivity
Selects the time period the dome must be not controlled until the inactivity event will be executed.
– **Off** (default): camera remains on a current scene indefinitely.
– **Scene 1**: camera returns to Preset 1.
– **Previous Aux**: camera returns to the previous activity.

Inactivity period
Determines the behavior of the dome when the control for dome is inactive. Select a time period from the pull-down list (3 sec. - 10 min.). The default setting is 2 minutes.

Auto pivot
The Auto pivot tilts the camera through the vertical position as the camera is rotated to maintain the correct orientation of the image. Set the Auto Pivot to On (default) to automatically rotate the camera 180º when following a subject traveling directly beneath the camera. To disable this feature, click Off.

Freeze frame
Select On to freeze the image while the camera moves to a predetermined scene position.

Turbo mode
Select On to set the camera in Turbo mode when an operator pans or tilts the camera manually. In this mode, the camera can pan at a maximum of 400° per second, and tilt at a maximum of 300° per second.

Tracker Zoom Threshold [%]
This parameter defines the zoom ratio percentage to which the camera zooms out after Tracker Timeout stops tracking, or if Intelligent Tracking loses visibility of an object being tracked. This allows the camera to re-acquire the target in a new wider FoV. Settings range from 0 to 100. The default is 50.

Tracker Timeout [sec]
This parameter allows the camera to stop tracking motion of certain objects, such as a tree or a flag swaying in the wind, in a confined area after the specified number of seconds. Settings range from 5 to 120. The default is 30.

Auto pan left limit
Sets the left Auto Pan limit of the camera. Use the preview window to move the camera to the left pan limit and click the button. The camera will not move past this limit when in Auto Pan Between Limits mode (AUX 2 ON).

Auto pan right limit
Sets the right Auto Pan limit of the camera. Use the preview window to move the camera to the right pan limit and click the button. The camera will not move past this limit when in Auto Pan Between Limits mode (AUX 2 ON).

Tilt up limit
Sets the upper tilt limit of the camera. Use the preview window to move the camera to the tilt limit and click the button.

Tilt limits
Click the Reset button to clear the upper tilt limit.

Tour A / Tour B
Starts and stops the recording of a recorded (guard) tour.
The camera can make up to two (2) recorded tours. A recorded tour saves all manual camera movements made during the recording, including its rate of pan, tilt and zoom speeds, and other lens setting changes. The tour does not capture camera video during the recording of the tour.
Note 1: You can save a total of 15 minutes of recorded actions between the two tours.
To record a tour:
1. Click the Start Recording button. The system prompts you to overwrite the existing tour.
2. Click Yes to overwrite the existing tour movements.
3. Click the View Control link, under the image cameo, to access the directional and zoom controls.
4. Use the View Control dialog box to make the necessary camera movements.
5. Click the Stop Recording button to save all actions.

North point
Click the Set button to overwrite the existing North point.
Click the Defaults button to reset the North point to factory defaults.

15.18 Illumination/Wiper

IR Illuminators
Controls IR illuminators. When ON, the camera gives a much better image at low light levels. Options are: On, Off, Auto.

IR intensity
Select the percentage of intensity of the infrared (IR) light.

White light illuminators
Select On to enable the White light illuminators.
Select Off to disable the White light illuminators.

White light intensity
Select the degree of intensity of the White light.

Enable White light timeout
Select On to enable a timeout for the White light feature.
Select Off to disable the timeout.
The timeout turns OFF the white lights, after they have been ON but idle for some time, to help to retain the life of the LEDs.

White light timeout [min]
Select the number of minutes (from 1 to 30) after which the White light will turn off after activation.

IR focus correction
Optimizes the focus for IR lighting. Options are: On, Off.

Wiper

Controls the wiper of the MIC cameras. Options are:
- Off: Turns off the wiper.
- On: Wiper wipes continuously until deactivated manually, or until it has been on for five minutes (after which the camera will stop the wiper automatically).
- Intermittent: Wipes twice, then stops. Every 15 seconds, this cycle repeats until users select another option in this field.
- One shot: Wipes five times, then turns off.

Wiper/washer

Click Start to start the wiper/washer. Click Stop to stop the wiper/washer.

15.19 Scenes and Tours

The camera can store up to 256 preset scenes. You can define the individual scenes that comprise a **preposition tour**.

You define individual preposition scenes, then use these scenes to define the preposition tour. The tour starts from the lowest scene number in the tour and progresses sequentially to the highest scene number in the tour. The tour displays each scene for a specified dwell time before advancing to the next scene.

By default, all scenes are part of the preposition tour unless removed.

To define and edit an individual scene:

1. Click the View Control link.
   Use the PTZ controls to move the camera into position.
   Navigate to the scene that you want to define as a preposition.
2. Click the Add scene (“+”) button to define the preposition.
3. Select a number for the scene, from 1 to 256.
4. Type an optional name for the scene, up to 20 characters long.
5. Click OK to save the scene to the Preposition list.
   The asterisk (*) to the left of the scene name indicates the scene is part of the preposition tour.
6. To delete a scene from the list, select the scene and click the Delete scene (“X”) button.
7. To overwrite an existing scene:
   Click the View Control link to access the PTZ controls.
   Use the PTZ controls to navigate to the new scene.
   Click the scene in the Preposition list you want to overwrite.
   Click the Overwrite scene button to apply the new scene to the existing preposition.
   To change the name of the scene, double-click the scene in the list. Then, change the name in the Edit Scene dialog box and click OK.
8. To view a scene in the preview window, select the scene in the list and click the Show scene button.
9. To view a scene from the LIVE page:
   Click a scene number below the PTZ controls on the View Control tab.
   OR
   Use the keypad and the Show Shot button on the Aux Control tab.

To define a preposition tour:

1. Create the individual scenes.
   By default, all scenes in the Preposition list are in the preposition tour.
2. To remove a scene from the tour, select the scene in the list and uncheck the Include in standard tour box.
3. Select a dwell time from the Standard preposition tour drop-down list.
4. To start the preposition tour:

Return to the LIVE page.
Click the Aux Control tab.
Type **8** in the input box and click the Aux On button.

5. To stop the tour, type **8** and click the Aux Off button.

15.20 Sectors

Sector

The camera's pan capability is 360° and is divided into 16 equal sectors. This section allows you to apply a title for each sector and to designate any sectors as a Blanked Sector.

To define a title for sectors:

1. Place the cursor in the input box to the right of the sector number.
2. Type a title for the sector, up to 20 characters long.
3. To blank the sector, click the check box to the right of the sector title.

No white light

Specifically for MIC cameras using the IR/White light illuminator:
Select this check box to prevent activation of the White light illuminator in the corresponding sectors, such as those which include highways / roads where White light might create a hazardous situation such as blinding a driver.
When this check box is selected, no White lights will activate for Presets stored in the corresponding sector.

15.21 Miscellaneous

Fast address

This parameter allows the appropriate camera to be operated via the numerical address in the control system. Enter a number between 0000 and 9999, inclusive, to identify the camera.

15.22 Audio

Note for MIC7000 cameras only: These options are available only if you have connected a VIDEOJET connect device (VJC-7000-90) to your camera.
You can set the gain of the audio signals to suit your specific requirements. The current video image is shown in the small window next to the slide controls to help you check the audio source and improve assignments. Your changes are effective immediately.
If you connect via Web browser, you must activate the audio transmission on the **LIVE Functions** page. (See *LIVE Functions, page 50*.) For other connections, the transmission depends on the audio settings of the respective system.

Audio

The audio signals are sent in a separate data stream parallel to the video data, and so increase the network load. The audio data are encoded according to G.711 and require an additional bandwidth of approximately 80 kbps for each connection. If you do not want any audio data to be transmitted, select **Off**.

Input volume

You can set the input volume with the slider (from 0 to 31, with 0 as the default).

Line In

You can set the line input gain with the slider (from 0 (zero) to 79, with 0 as the default). Make sure that the display does not go beyond the green zone during modulation.

Line Out

You can set the line output gain with the slider (from 0 (zero) to 79, with 0 as the default). Make sure that the display does not go beyond the green zone during modulation.

Recording format
Select a format for audio recording. Select L16 or AAC (Advanced Audio Coding) if you want better audio quality with higher sampling rates. Note that the L16 standard requires approximately eight times the bandwidth of the format G.711.

15.23 Pixel Counter

Counts the number of pixels in a defined image area. The pixel counter allows the installer to easily verify that the camera installation fulfills any regulatory or specific customer requirements, for example, calculating the pixel resolution of the face of a person passing a doorway monitored by the camera.

15.24 Advanced Mode: Recording

Storage Management, page 65
Recording Profiles, page 67
Maximum Retention Time, page 68
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15.25 Storage Management

You can record the images from the camera on various local storage media (user-supplied SD, SDHC, or SDXC memory card) or on an appropriately configured iSCSI system.
You can record the images from the camera on an appropriately configured iSCSI system.
It is also possible to let the VRM Video Recording Manager control all recording with accessing an iSCSI system. This is an external program for configuring recording tasks for video servers. For further information please contact your local customer service at Bosch Security Systems Inc.

Device manager
If you activate the **Managed by VRM** option in this screen, the VRM Video Recording Manager will manage all recording and you will not be able to configure any further settings here.

Caution!
Activating or deactivating VRM causes the current settings to be lost; they can only be restored through reconfiguration.

Recording media
Select the required recording media here so that you can then activate them and configure the recording parameters.

iSCSI Media
If you want to use an **iSCSI system** as a recording medium, you must set up a connection to the required iSCSI system and set the configuration parameters.

Notice!
The iSCSI storage system selected must be available on the network and completely set up. Amongst other things, it must have an IP address and be divided into logical drives (LUN).

1. Enter the IP address of the required iSCSI destination in the **iSCSI IP address** field.
2. If the iSCSI destination is password protected, enter this into the **Password** field.
3. Click the **Read** button. The connection to the IP address will be established. In the **Storage overview** field, you can see the corresponding logical drives.

Local Media
The supported local recording media are displayed in the Storage overview field.

Activating and Configuring Storage Media
The storage overview displays the available storage media. You can select individual media or iSCSI drives and transfer these to the **Managed storage media** list. You can activate the storage media in this list and configure them for storage.

Caution!
Each storage medium can only be associated with one user. If a storage medium is already being used by another user, you can decouple the user and connect the drive with the camera. Before decoupling, make absolutely sure that the previous user no longer needs the storage medium.

1. In the **Recording media** section, click the **iSCSI Media** and **Local Media** tabs to display the applicable storage media in the overview.
2. In the **Storage overview** section, double-click the required storage medium, an iSCSI LUN or one of the other available drives. The medium is then added to the **Managed storage media** list. In the **Status** column, newly added media are indicated by the status **Not active**.
3. Click the **Set** button to activate all media in the **Managed storage media** list. In the **Status** column, these are indicated by the status **Online**.
4. Check the box in the **Rec. 1** or **Rec. 2** to specify which data stream should be recorded on the storage media selected. **Rec. 1** stores Stream 1, **Rec. 2** stores Stream 2. This means that you can record the standard data stream on a hard drive and record alarm images on the mobile CF card, for example.
5. Check the boxes for the **Overwrite older recordings** option to specify which older recordings can be overwritten once the available memory capacity has been used. **Recording 1** corresponds to Stream 1, **Recording 2** corresponds to Stream 2.

Caution!
If older recordings are not allowed to be overwritten when the available memory capacity has been used, the recording in question will be stopped. You can specify limitations for overwriting old recordings by configuring the retention time (see *Maximum Retention Time, page 68*).

Formatting Storage Media
You can delete all recordings on a storage medium at any time.

Caution!
Check the recordings before deleting and back up important sequences on the computer's hard drive.

1. Click a storage medium in the **Managed storage media** list to select it.
2. Click the **Edit** button below the list. A new window will open.
3. Click the **Formatting** button to delete all recordings in the storage medium.
4. Click **OK** to close the window.

Deactivating Storage Media
You can deactivate any storage medium from the **Managed storage media** list. It is then no longer used for recordings.

1. Click a storage medium in the **Managed storage media** list to select it.

2. Click the **Remove** button below the list. The storage medium is deactivated and removed from the list.

15.26 Recording Profiles

You can define up to ten different recording profiles. You will then use these recording profiles in the recording scheduler, where they are linked with the individual days and times (see *Recording Scheduler, page 68*).

Notice!
You can change or add to the recording profile description on the tabs on the **Recording Scheduler** page (see *Recording Scheduler, page 68*).

1. Click one of the tabs to edit the corresponding profile.
2. If necessary, click the **Default** button to return all settings to their default values.
3. Click the **Copy Settings** button if you want to copy the currently visible settings to other profiles. A new window will open and you can select the profiles in which you want to copy the settings.
4. For each profile, click the **Set** button to save the settings in the unit.

Standard recording
Here you can select the mode for standard recordings.
If you select **Continuous**, the recording proceeds continuously. If the maximum memory capacity is reached, older recordings will automatically be overwritten. If you select the **Pre-alarm** option, recording will only take place in the pre-alarm time, during the alarm and during the set post-alarm time.
If you select **Off**, no automatic recording takes place.

Caution!
You can specify limitations for overwriting older recordings in **Continuous** mode by configuring the retention time (see *Maximum Retention Time, page 68*).

Standard profile
From this field, you can select the encoder profile to be used for recording (see Encoder Profile).

Notice!
The recording profile can deviate from the standard setting **Active profile** and is only used during an active recording.

Pre-alarm time
You can select the required pre-alarm time from the list field.

Post-alarm time
You can select the required post-alarm time from the list field.

Post-alarm profile
You can select the encoder profile to be used for recording during the post-alarm time (see Encoder Profile).
The **Standard profile** option adopts the selection at the top of the page.

Alarm input / Analysis alarm / Video loss alarm
Here you can select the alarm sensor that is to trigger a recording.

Virtual alarm
Here you can select the virtual alarm sensors that are to trigger a recording, via RCP+ commands or alarm scripts, for example.

Notice!
For more information, please see the Alarm Task Script Language document and the RCP+ documentation. These documents can be found on the product CD supplied.

Recording includes
You can specify whether, in addition to video data and metadata (for example alarms, VCA data and serial data) should also be recorded. Including metadata could make subsequent searches of recordings easier but it requires additional memory capacity.

Caution!
Without metadata, it is not possible to include video content analysis in recordings.

15.27 Maximum Retention Time

You can specify the retention times for recordings. If the available memory capacity of a medium has been used, older recordings are only overwritten if the retention time entered here has expired.

Notice!
Make sure that the retention time corresponds with the available memory capacity. A rule of thumb for the memory requirement is as follows: 1 GB per hour retention time with 4CIF for complete frame rate and high image quality.

Maximum Retention Time
Enter the required retention time in hours or days for each recording. **Recording 1** corresponds to Stream 1, **Recording 2** corresponds to Stream 2.

15.28 Recording Scheduler

The recording scheduler allows you to link the created recording profiles with the days and times at which the camera's images are to be recorded in the event of an alarm.
You can link any number of 15-minute intervals with the recording profiles for each day of the week. Moving the mouse cursor over the table displays the time below it. This aids orientation.
In addition to the normal weekdays, you can define holidays that are not in the standard weekly schedule on which recordings are to apply. This allows you to apply a schedule for Sundays to other days with dates that fall on varying weekdays.

1. Click the profile you want to link in the **Time periods** field.
2. Click in a field in the table, hold down the mouse button and drag the cursor over all the periods to be assigned to the selected profile.
3. Use the right mouse button to deselect any of the intervals.
4. Click the **Select All** button to link all time intervals to the selected profile.
5. Click the **Clear All** button to deselect all of the intervals.
6. When you are finished, click the **Set** button to save the settings in the unit.

Holidays
You can define holidays that are not in the standard weekly schedule on which recordings are to apply. This allows you to apply a schedule for Sundays to other days with dates that fall on varying weekdays.

1. Click the **Holidays** tab. Any days that have already been selected will be shown in the table.
2. Click the **Add** button. A new window will open.
3. Select the desired date from the calendar. You can select several consecutive calendar days by holding down the mouse button. These will later be displayed as a single entry in the table.
4. Click **OK** to accept the selection. The window will close.
5. Assign the individual holidays to the recording profiles, as described above.

Deleting Holidays

You can delete holidays you have defined yourself at any time.

1. Click the **Delete** button. A new window will open.
2. Click the date you wish to delete.
3. Click **OK**. The item will be deleted from the table and the window will close.
4. The process must be repeated for deleting additional days.

Time periods

You can change the names of the recording profiles.

1. Click a profile and then the **Rename** button.
2. Enter your chosen name and then click the **Rename** button again.

Activating the Recording

After completing configuration you must activate the recording scheduler and start the recording. Once recording is underway, the **Recording Profiles** and **Recording Scheduler** pages are deactivated and the configuration cannot be modified.

You can stop the recording activity at any time and modify the settings.

1. Click the **Start** button to activate the recording scheduler.
2. Click the **Stop** button to deactivate the recording scheduler. Running recordings are interrupted and the configuration can be changed.

Recording status

The graphic indicates the recording activity of the camera. You will see an animated graphic while recording is taking place.

15.29 Recording Status

Certain details on the recording status are displayed here for information purposes. You cannot change any of these settings.

If an error occurs during recording, the Status line for the recording may display informational icons that provide additional information when you point to them with your mouse.

15.30 Advanced Mode: Alarm

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Alarm Rules

15.31 Alarm Connections

You can select how the camera responds to an alarm. In the event of an alarm, the unit can automatically connect to a pre-defined IP address. You can enter up to ten IP addresses to which the camera will connect in sequence in the event of an alarm, until a connection is made.

Connect on alarm
Select **On** so that the camera automatically connects to a predefined IP address in the event of an alarm.
By setting **Follows input 1** the unit maintains the connection that has been automatically established for as long as an alarm exists on alarm input 1.

Notice!
In the default setting, Stream 2 is transmitted for alarm connections. Bear this fact in mind when assigning the profile (see Encoder Profile).

Number of destination IP address
Specify the numbers of the IP addresses to be contacted in the event of an alarm. The unit contacts the remote stations one after the other in the numbered sequence until a connection is made.

Destination IP address
For each number, enter the corresponding IP address for the desired remote station.

Destination password
If the remote station is password protected, enter the password here.
In this page, you can save a maximum of ten destination IP addresses and hence up to ten passwords for connecting to remote stations. If connections to more than ten remote stations are to be possible, for example when initiating connections via higher-ranking systems such as VIDOS or Bosch Video Management System, you can store a general password here. The camera can use this general password to connect to all remote stations protected with the same password. In this case, proceed as follows:

1. Select **10** from the **Number of destination IP address** list field.
2. Enter the address **0.0.0.0** in the **Destination IP address** field.
3. Enter your chosen password in the **Destination password** field.
4. Define this password as the **user** password for all remote stations to which a connection is to be possible.

Notice!
If you enter the destination IP address 0.0.0.0 for destination 10, this address will no longer be used for the tenth attempt at automatic connection in the event of an alarm. The parameter is then used only to save the general password.

Video transmission
If the unit is operated behind a firewall, **TCP (HTTP port)** should be selected as the transfer protocol. For use in a local network, select **UDP**.

Caution!
Please note that in some circumstances, a larger bandwidth must be available on the network for additional video images in the event of an alarm, in case Multicast operation is not possible. To enable Multicast operation, select the **UDP** option for the **Video transmission** parameter here and on the **Network** page (see *Network Access, page 79*).

Stream
Select the number of the stream from the drop-down list.

Remote port
Depending on the network configuration, select a browser port here. The ports for HTTPS connections will be available only if the **On** option is selected in the **SSL encryption** parameter.

Video output
If you know which unit is being used as the receiver, you can select the analog video output to which the signal should be switched. If the destination unit is unknown, it is advisable to select the **First available** option. In this case, the image is placed on the first free video output. This is an output on which there is no signal. The connected monitor only displays images when an alarm is triggered. If you select a particular video output and a split image is set for this output on the receiver, you can also select from **Decoder** the decoder in the receiver that is to be used to display the alarm image.

Notice!
Refer to the destination unit documentation concerning image display options and available video outputs.

Decoder
Select a decoder of the receiver to display the alarm image. The decoder selected has an impact on the position of the image in a split screen. For example, you can specify via a VIP XD that the upper-right quadrant should be used to display the alarm image by selecting decoder 2.

SSL encryption
The data for the connection, for example the password, can be securely transmitted with SSL encryption. If you have selected the **On** option, only encrypted ports are offered in the **Remote port** parameter.

Notice!
Please note that the SSL encryption must be activated and configured at both ends of a connection. This requires the appropriate certificates to be uploaded onto the camera.

You can activate and configure encryption of the media data (video and metadata) on the **Encryption** page (see *Encryption, page 86*).

Auto-connect
Select the **On** option to automatically re-establish a connection to one of the previously specified IP addresses after each reboot, after a connection breakdown or after a network failure.

Notice!
In the default setting, Stream 2 is transmitted for automatic connections. Bear this fact in mind when assigning the profile (see Encoder Profile).

Audio
Select On to activate audio alarms.

15.32 VCA

The camera has integrated video content analysis (VCA), which can detect and analyze changes in the signal on the basis of image processing. Such changes can be due to movements in the camera's field of view.
You can select various VCA configurations and adapt these to your application as required. The Silent MOTION+ Configuration is active by default. In this configuration, metadata is created to facilitate searches of recordings; however, no alarm is triggered.

1. Select a VCA configuration and make the required settings.
2. If necessary, click the **Default** button to return all settings to their default values.

Intelligent DNR (Digital Noise Reduction)
IVA / VCA controls the iDNR feature, which reduces noise based on motion activity in the scene. When there is no motion in the preset scene, noise reduction is increased. When there is motion detected in the preset scene, noise reduction is decreased to reduce bandwidth and optimize storage space.
To disable the iDNR feature, select the OFF option in the **VCA configuration** field.
To enable iDNR, select a Profile # (1 – 16) or Silent VCA in the **VCA configuration** field. If you select a specific profile, you must also select MOTION+ in the **Analysis Type** field.

VCA Profiles
You can configure two profiles with different VCA configurations. You can save profiles on your computer's hard drive and load saved profiles from there. This can be useful if you want to test a number of different configurations. Save a functioning configuration and test new settings. You can use the saved configuration to restore the original settings at any time.

Notice!
If computing power becomes short, the highest priority is always the live images and recordings. This can lead to impairment of the video content analysis. You should therefore observe the processor load and optimize the encoder settings or the video content analysis settings as necessary.

1. Select a VCA profile and enter the required settings.
2. If necessary, click the **Default** button to return all settings to their default values.
3. Click the **Save...** button to save the profile settings to another file. A new window is opened, in which you can specify where you want to save the file and what name you want to save it under.
4. Click the **Load...** button to load a saved profile. A new window opens in which you can select the profile file and specify where to save the file.

VCA configuration
Select one of the profiles here to activate it or edit it.
You can rename the profile.

1. To rename the file, click the icon to the right of the list field and enter the new profile name in the field.
2. Click the icon again. The new profile name is saved.

Preset
Select Off or Test.

Alarm status
The alarm status is displayed here for information purposes. This means you can check the effects of your settings immediately.

Aggregation times
Use the slider (from 0 (zero) to 20 (0 is the default) to select the aggregation times.

Analysis type
Select the required analysis algorithm. By default, only **MOTION+** is available – this offers a motion detector and essential recognition of tampering.

Notice!
Additional analysis algorithms with comprehensive functions such as IVMD and IVA are available from Bosch Security Systems Inc.
If you select one of these algorithms, you can set the corresponding parameters here directly. You can find information on this in the relevant documents on the product CD supplied.

Metadata is always created for a video content analysis, unless this was explicitly excluded. Depending on the analysis type selected and the relevant configuration, additional information overlays the video image in the preview window next to the parameter settings. Options are: MOTION+, IVA 5.6, IVA 5.6 Flow. With the **MOTION+** analysis type, for example, the sensor fields in which motion is recorded will be marked with rectangles.

Notice!
On the **LIVE Functions** page, you can also enable additional information overlays for the **LIVE** page (see *LIVE Functions, page 50*).

Motion detector (MOTION+ only)
For the detector to function, the following conditions must be met:
- Analysis must be activated.
- At least one sensor field must be activated.
- The individual parameters must be configured to suit the operating environment and the desired responses.
- The sensitivity must be set to a value greater than zero.

Caution!
Reflections of light (off glass surfaces, etc.), switching lights on or off or changes in the light level caused by cloud movement on a sunny day can trigger unintended responses from the motion detector and generate false alarms. Run a series of tests at different times of the day and night to ensure that the video sensor is operating as intended.
For indoor surveillance, ensure constant lighting of the areas during the day and at night.

Sensitivity (MOTION+ only)
The basic sensitivity of the motion detector can be adjusted for the environmental conditions to which the camera is subject.
The sensor reacts to variations in the brightness of the video image. The darker the observation area, the higher the value that must be selected.

Minimum object size (MOTION+ only)
You can specify the number of sensor fields that a moving object must cover to generate an alarm. This is to prevent objects that are too small from triggering an alarm.
A minimum value of **4** is recommended. This value corresponds to four sensor fields.

Debounce time 1 s (MOTION+ only)
The debounce time is intended to prevent very brief alarm events from triggering individual alarms. If the Debounce time 1 s option is activated, an alarm event must last at least one second to trigger an alarm.

Select Area (MOTION+ only)

The areas of the image to be monitored by the motion detector can be selected. The video image is subdivided into 858 square fields. Each of these fields can be activated or deactivated individually. If you wish to exclude particular regions of the camera's field of view from monitoring due to continuous movement (by a tree in the wind, etc.), the relevant fields can be deactivated.

- Click **Select Area** to configure the sensor fields. A new window will open.

1. If necessary, click **Clear All** first to clear the current selection (fields marked yellow).
2. Left-click the fields to be activated. Activated fields are marked yellow.
3. If necessary, click **Select All** to select the entire video frame for monitoring.
4. Right-click any fields you wish to deactivate.
5. Click **OK** to save the configuration.
6. Click the close button **X** in the window title bar to close the window without saving the changes.

Tamper detection

You can reveal the tampering of cameras and video cables by means of various options. Run a series of tests at different times of the day and night to ensure that the video sensor is operating as intended.

Notice!

The options for tamper detection can only be set for fixed cameras. Dome cameras or other motorized cameras cannot be protected in this manner as the movement of the camera itself causes changes in the video image that are too great.

Sensitivity

Notice!

This and the following parameter are only accessible if the reference check is activated.

The basic sensitivity of the tamper detection can be adjusted for the environmental conditions to which the camera is subject.

The algorithm reacts to the differences between the reference image and the current video image. The darker the observation area, the higher the value that must be selected.

Trigger delay (s)

You can set delayed alarm triggering. The alarm is only triggered after a set time interval in seconds has elapsed and then only if the triggering condition still exists. If the original condition has been restored before this time interval elapses, the alarm is not triggered. This allows you to avoid false alarms triggered by short-term changes, for example cleaning activities in the direct field of vision of the camera.

Global change

You can set how large the global change in the video image must be for an alarm to be triggered. This setting is independent of the sensor fields selected under **Select Area**. Set a high value if fewer sensor fields need to change to trigger an alarm. With a low value, it is necessary for changes to occur simultaneously in a large number of sensor fields to trigger an alarm.

This option allows you to detect, independently of motion alarms, manipulation of the orientation or location of a camera resulting from turning the camera mount bracket, for instance.

Global change
Activate this function if the global change, as set with the **Global change** slide control, should trigger an alarm.

Scene too bright
Activate this function if tampering associated with exposure to extreme light (for instance, shining a flashlight directly on the lens) should trigger an alarm. The average brightness of the scene provides a basis for recognition.

Scene too dark
Activate this function if tampering associated with covering the lens (for instance, by spraying paint on it) should trigger an alarm. The average brightness of the scene provides a basis for recognition.

Scene too noisy
Activate this function if tampering associated with EMC interference (noisy scene as the result of a strong interference signal in the vicinity of the video lines), as an example, should trigger an alarm.

Reference Check
You can save a reference image that is continuously compared with the current video image. If the current video image in the marked areas differs from the reference image, an alarm is triggered. This allows you to detect tampering that would otherwise not be detected, for example if the camera is turned.

1. Click **Reference** to save the currently visible video image as a reference.
2. Click **Select Area** and select the areas in the reference image that are to be monitored.
3. Check the box **Reference check** to activate on-going matching. The stored reference image is displayed in black and white below the current video image, and the selected areas are marked in yellow.
4. Select the **Disappearing edges** or **Appearing edges** option to specify the reference check once again.

Disappearing edges
The area selected in the reference image should contain a prominent structure. If this structure is concealed or moved, the reference check triggers an alarm. If the selected area is too homogenous, so that concealing and moving the structure would not trigger an alarm, then an alarm is triggered immediately to indicate the inadequate reference image.

Appearing edges
Select this option if the selected area of the reference image includes a largely homogenous surface. If structures appear in this area, then an alarm is triggered.

Select Area
You can select the image areas in the reference image that are to be monitored. The video image is subdivided into 858 square fields. Each of these fields can be activated or deactivated individually.

Notice!
Select only those areas for reference monitoring in which no movement takes place and that are always evenly lit, as false alarms could otherwise be triggered.

1. Click **Select Area** to configure the sensor fields. A new window will open.
2. If necessary, click **Clear All** first to clear the current selection (fields marked yellow).
3. Left-click the fields to be activated. Activated fields are marked yellow.
4. If necessary, click **Select All** to select the entire video frame for monitoring.
5. Right-click any fields you wish to deactivate.
6. Click **OK** to save the configuration.

7. Click the close button **X** in the window title bar to close the window without saving the changes.

15.33 Virtual Masks

Virtual masks allow users to mask parts of the scene which should not be considered for flow analysis to trigger Intelligent Tracking. This allows users to mask background motion in the scene such as moving trees, pulsating lights, busy roads, etc.
To create a virtual mask:
1. Select the number of the Virtual mask. In the video preview window, a dark grey rectangle appears with the text “Mask *x*,” where ‘x’ is the number of the mask.
2. Select the mask with your mouse. Move the mouse to position the mask over the area of the view that you want to mask, and then click “Set.” The text “VM Configuration active!” appears in the View Control window.
3. Click Enabled to enable the virtual mask. The rectangle that represents the mask in the preview window becomes red. The text “Virtual Masks: ENABLED” appears in the View Control window.
To disable virtual masks:
Click the Disable masks checkbox. The text “Virtual Masks: DISABLED” appears in the View Control window.

15.34 Audio Alarm

Note for MIC7000 cameras only: These options are available only if you have connected a VIDEOJET connect device (VJC-7000-90) to your camera.
The camera can create alarms on the basis of audio signals. You can configure signal strengths and frequency ranges in such a way that false alarms, for example due to machine noise or background noise, are avoided.

Notice!
First set up normal audio transmission before you configure the audio alarm here (see *Audio, page 64*).

Audio alarm
Select **On** if you want the device to generate audio alarms.

Name
The name makes it easier to identify the alarm in extensive video monitoring systems, for example with the VIDOS and Bosch Video Management System programs. Enter a unique and clear name here.

Caution!
Do not use any special characters, for example **&**, in the name.
Special characters are not supported by the system's internal recording management and may therefore result in the Player or Archive Player programs being unable to play back the recording.

Signal Ranges
You can exclude particular signal ranges in order to avoid false alarms. For this reason the total signal is divided into 13 tonal ranges (mel scale). Check or uncheck the boxes below the graphic to include or exclude individual ranges.

Threshold
Set up the threshold on the basis of the signal visible in the graphic. You can set the threshold using the slide control or, alternately, you can move the white line directly in the graphic using the mouse.

Sensitivity
You can use this setting to adapt the sensitivity to the sound environment. You can effectively suppress individual signal peaks. A high value represents a high level of sensitivity.

15.35 Alarm E-Mail

As an alternative to automatic connecting, alarm states can also be documented by e-mail. In this way it is possible to notify a recipient who does not have a video receiver. In this case, the camera automatically sends an e-mail to a previously defined e-mail address.

Send alarm e-mail
Select **On** if you want the unit to automatically send an alarm e-mail in the event of an alarm.

Mail server IP address
Enter the IP address of a mail server that operates on the SMTP standard (Simple Mail Transfer Protocol). Outgoing e-mails are sent to the mail server via the address you entered. Otherwise leave the box blank (**0.0.0.0**).

SMTP user name
Enter a registered user name for the chosen mailserver here.

SMTP password
Enter the required password for the registered user name here.

Format
You can select the data format of the alarm message.
- **Standard (with JPEG)** E-mail with attached JPEG image file.
- **SMS** E-mail in SMS format to an e-mail-to-SMS gateway (for example to send an alarm by cellphone) without an image attachment.

Caution!
When a cellphone is used as the receiver, make sure to activate the e-mail or SMS function, depending on the format, so that these messages can be received.
You can obtain information on operating your cellphone from your cellphone provider.

Image size
Select the appropriate image size: Small, Medium, Large, 720p, 1080p.

Attach JPEG from camera
Click the checkbox to specify that JPEG images are sent from the camera. An enabled video input is indicated by a check mark.

Destination address
Enter the e-mail address for alarm e-mails here. The maximum address length is 49 characters.

Sender address
Enter a unique name for the e-mail sender, for example the location of the device. This will make it easier to identify the origin of the e-mail.
Note: The name must include at least two character groups separated by a blank (for example, Parking Garage) in order for the system to generate an email from that name, as in “From Parking Garage”. Text with only one group of characters (for example, Lobby) will not generate an email.

Test e-mail
You can test the e-mail function by clicking the **Send Now** button. An alarm e-mail is immediately created and sent.

15.36 Alarm Task Editor

Caution!
Editing scripts on this page overwrites all settings and entries on the other alarm pages. This procedure cannot be reversed.
In order to edit this page, you must have programming knowledge and be familiar with the information in the Alarm Task Script Language document.

As an alternative to the alarm settings on the various alarm pages, you can enter your desired alarm functions in script form here. This will overwrite all settings and entries on the other alarm pages.

1. Click the **Examples** link under the Alarm Task Editor field to see some script examples. A new window will open.
2. Enter new scripts in the Alarm Task Editor field or change existing scripts in line with your requirements.
3. When you are finished, click the **Set** button to transmit the scripts to the unit. If the transfer was successful, the message **Script successfully parsed** is displayed over the text field. If it was not successful, an error message will be displayed with further information.

15.37 Alarm Rules

An alarm rule can define which input(s) activate which output(s). Basically, an alarm rule allows you to customize the camera to respond automatically to different alarm inputs.
To configure an alarm rule specify one input from a physical connection, a motion detection trigger, or from a connection to the camera's LIVE page. The physical input connection can be activated by dry contact devices such as pressure pads, door contacts, and similar devices.
Next, specify up to two (2) rule outputs, or the camera's response to the input. Outputs include a physical alarm output, an AUX command, or a preposition scene.
1. Click the Enabled check box to activate the alarm.
2. Choose one of the following alarm Inputs: Local Input 1: a physical alarm connection.
Local Input 2: a physical alarm connection.
IVA/MOTION+: an alarm when IVA or motion detection is activated.
Connection: an alarm when an attempt is made to access the camera's IP address.
3. Choose one of the following output commands for both Output 1 and Output 2 settings:
None: no defined command.
Alarm Output: defines a physical connection from the open collector alarm output.
Aux On: defines a standard or custom keyboard ON command.
Aux Off: defines a standard or custom keyboard OFF command.
Shot: defines a preset scene from shot 1-256.4.Click Set to save and to activate the alarm rules.
(Refer to the User Command Table for a list of all AUX commands.)
Note for MIC7000 cameras only:
Alarm Output is available only when the **Application Variant** field in the *Application Variant, page 52* is set to " -IO," and the camera is connected to a MIC-ALM-WAS-24 or to a VJC-7000-90.

15.38 Advanced Mode: Interfaces

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Note: For a MIC camera, physical alarm connections are only applicable when the camera is connected to optional MIC-ALM-WAS-24 or VJC-7000-90.

15.39 Alarm Inputs

Select the type of input for each physical alarm. Select from either **N.O.** (Normally Open) or **N.C.** (Normally Closed) and provide an optional name for each input.

15.40 Alarm Outputs

The camera incorporates three (3) open collector alarm or transistor outputs. Use the following settings to configure the relay for alarm outputs.

Idle state
Specify either **Open** or **Closed** idle state.

Operating mode
Select one of the following modes for operation: Bistable, 0.5 s, 1 s, 5 s, 10 s, or 60 s.

Output name
Type an optional name for the relay connection, up to 20 characters.

Trigger output
Click the appropriate **Trigger output** button to test the relay / output connection.

15.41 Advanced Mode: Network

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15.42 Network Access

The settings on this page are used to integrate the camera into an existing network.
Some changes only take effect after the unit is rebooted. In this case, the **Set** button changes to **Set and Reboot**.

1. Make the desired changes.
2. Click the **Set and Reboot** button. The camera reboots and the changed settings are activated.

Caution!
If you change the IP address, subnet mask or gateway address, the camera is only available under the new addresses after the reboot.

Automatic IP assignment
If a DHCP server is employed in the network for the dynamic assignment of IP addresses, you can activate acceptance of IP addresses automatically assigned to the camera.
Certain applications (Bosch Video Management System, Archive Player, Configuration Manager) use the IP address for the unique assignment of the unit. If you use these applications, the DHCP server must support the fixed assignment between IP address and MAC address, and must be appropriately set up so that, once an IP address is assigned, it is retained each time the system is rebooted.

IPv4
Fill in the 3 fields in this section of the screen.

IP address
Enter the desired IP address for the camera in this field. The IP address must be valid for the network.

Subnet mask
Enter the appropriate subnet mask for the selected IP address here.

Gateway address
If you want the unit to establish a connection to a remote location in a different subnet, enter the IP address of the gateway here. Otherwise leave the box blank (**0.0.0.0**).

IPv6
Consult with the network administrator before making changes to this section.

IP address
Enter the desired IP address for the camera in this field. The IP address must be valid for the network. A typical IPv6 address may resemble the following example:
2001:db8: :52:1:1
Consult the network administrator for valid IPv6 address construction.

Prefix length
A typical IPv6 node address consists of a prefix and an interface identifier (total 128 bits). The prefix is the part of the address where the bits have fixed values or are the bits that define a subnet.

Gateway address
If you want the unit to establish a connection to a remote location in a different subnet, enter the IP address of the gateway here. Otherwise leave the box blank (**0.0.0.0**).

DNS server address 1 / DNS server address 2
The camera is easier to access if the unit is listed on a DNS server. If you wish, for example, to establish an Internet connection to the camera, it is sufficient to enter the name given to the unit on the DNS server as a URL in the browser. Enter the IP address of the DNS server here. Servers are supported for secure and dynamic DNS.

Video transmission
If the unit is operated behind a firewall, **TCP (HTTP port)** should be selected as the transfer protocol. For use in a local network, select **UDP**.

Caution!
Multicast operation is only possible with the UDP protocol. The TCP protocol does not support multicast connections.
The MTU value in UDP mode is 1,514 bytes.

TCP rate control
Select On to control the rate of transmission control protocol. Select Off if you do not want to control the TCP rate.

HTTP browser port
Select a different HTTP browser port from the list if required. The default HTTP port is 80. If you want to allow only secure connections via HTTPS, you must deactivate the HTTP port. In this case, select **Off**.

HTTPS browser port
If you wish to allow browser access on the network via a secure connection, select an HTTPS browser port from the list if necessary. The default HTTPS port is 443. Select the **Off** option to deactivate HTTPS ports; only unsecured connections will now be possible.

The camera uses the TLS 1.0 encryption protocol. You may have to activate this protocol via your browser configuration. You must also activate the protocol for the Java applications (via the Java control panel in the Windows control panel).

Notice!
If you want to allow only secure connections with SSL encryption, you must select the **Off** option for each of the parameters **HTTP browser port**, **RCP+ port 1756** and **Telnet support**. This deactivates all unsecured connections. Connections will then only be possible via the HTTPS port.

You can activate and configure encryption of the media data (video and metadata) on the **Encryption** page (see *Encryption, page 86*).

RCP+ port 1756
To exchange connection data, you can activate the unsecured RCP+ port 1756. If you want connection data to be transmitted only when encrypted, select the **Off** option to deactivate the port.

Telnet support
If you want to allow only secure connections with encrypted data transmission, you must select the **Off** option to deactivate Telnet support. The unit will then no longer be accessible using the Telnet protocol.

Interface mode ETH
If necessary, select the Ethernet link type for the **ETH** interface. Depending on the unit connected, it may be necessary to select a special operation type.

Network MSS (Byte)
You can set the maximum segment size for the IP packet's user data. This gives you the option to adjust the size of the data packets to the network environment and to optimize data transmission. Please comply with the MTU value of 1,514 bytes in UDP mode.

iSCSI MSS (Byte)
You can specify a higher MSS value for a connection to the iSCSI system than for the other data traffic via the network. The potential value depends on the network structure. A higher value is only useful if the iSCSI system is located in the same subnet as the camera.

Network MTU (Byte)
The value in the field defaults to 1514.

15.43 DynDNS

Enable DynDNS
DynDNS.org is a DNS hosting service that stores IP addresses in a database ready for use. It allows you to select the camera via the Internet using a host name, without having to know the current IP address of the unit. You can enable this service here. To do this, you must have an account with DynDNS.org and you must have registered the required host name for the unit on that site.

Notice!
Information about the service, registration process and available host names can be found at DynDNS.org.

Provider
The value in this field defaults to dyndns.org. Select another option as necessary.

Host name
Enter the host name registered on DynDNS.org for the camera here.

User name
Enter the user name you registered at DynDNS.org here.

Password
Enter the password you registered at DynDNS.org here.

Force registration now
You can force the registration by transferring the IP address to the DynDNS server. Entries that change frequently are not provided in the Domain Name System. It is a good idea to force the registration when you are setting up the device for the first time. Only use this function when necessary and no more than once a day, to avoid the possibility of being blocked by the service provider. To transfer the IP address of the camera, click the **Register** button.

Status
The status of the DynDNS function is displayed here for information purposes. You cannot change any of these settings.

Notification mail
Select On to set the system to provide email notification of domain registration.

Mail address
Enter the email address for notification.

15.44 Advanced

The settings on this page are used to implement advanced settings for the network.

User Mode
Select the appropriate mode for cloud-based services:
– Off
– On
– Auto (default option)

RTSP port
If necessary, select a different port for the exchange of the RTSP data from the list. The standard RTSP port is 554. Select **Off** to deactivate the RTSP function.

Authentication
If a RADIUS server is employed in the network for managing access rights, authentication must be activated here to allow communication with the unit. The RADIUS server must also contain the corresponding data.
To configure the unit, you must connect the camera directly to a computer using a network cable. This is because communication via the network is not enabled until the **Identity** and **Password** parameters have been set and successfully authenticated.

Identity
Enter the name that the RADIUS server is to use for identifying the camera.

Password
Enter the password that is stored in the RADIUS server.

NTCIP
Specifies a set of rules and protocols for organizing, describing and exchanging transportation management information between transportation management applications and transportation equipment such that they interoperate with each other.
Select a port for **NTCIP** and the **Address** from the appropriate drop-down lists.

TCP port
The device can receive data from an external TCP sender, for example an ATM or POS device, and store it as metadata. Select the port for TCP communication. Select Off to deactivate the TCP metadata function.

Sender IP address
Enter the IP address of the TCP metadata sender here.

15.45 Network Management

SNMP
The camera supports the SNMP V1 (Simple Network Management Protocol) for managing and monitoring network components, and can send SNMP messages (traps) to IP addresses. The unit supports SNMP MIB II in the unified code. If you wish to send SNMP traps, enter the IP addresses of one or two required target devices here.
If you select **On** for the **SNMP** parameter and do not enter an SNMP host address, the camera does not send them automatically, but only replies to SNMP requests. If you enter one or two SNMP host addresses, SNMP traps are sent automatically. Select **Off** to deactivate the SNMP function.

1. SNMP host address / 2. SNMP host address
If you wish to send SNMP traps automatically, enter the IP addresses of one or two required target units here.

SNMP traps
You can select which traps are to be sent.
1. Click **Select**. A list is opened.
2. Click the checkboxes to select the required traps. All the checked traps will be sent.
3. Click **Set** to accept the selection.

UPnP
You can activate the Universal Plug and Play (UPnP) function. If the function is turned on, the unit responds to requests from the network and is automatically registered on the requesting computers as a new network device. For example, access to the unit can then be made using Windows Explorer without knowledge of the IP address of the unit.

Notice!
To use the UPnP function on a computer, both the Universal Plug and Play Device Host and SSDP Discovery Service must be active in Windows XP and Windows 7.

Quality of service
The camera offers Quality of Service (QoS) configuration options to ensure fast network response to PTZ data and images. Quality of Service (QoS) is the set of techniques to manage network resources. QoS manages the delay, delay variation (jitter), bandwidth, and packet loss parameters to guarantee the ability of a network to deliver predictable results. QoS identifies the type of data in a data packet and divides the packets into traffic classes that can be prioritized for forwarding.
Consult with your network administrator for assistance configuring the **Audio**, **Video**, **Control**, and the **Alarm video** settings, and to select the appropriate **Post-alarm time**.

15.46 Multicast

In addition to a 1:1 connection between an encoder and a single receiver (unicast), the camera can enable multiple receivers to receive the video signal from an encoder simultaneously. The device either duplicates the data stream itself and then distributes it to multiple receivers (Multi-unicast) or it sends a single data stream to the network, where the data stream is simultaneously distributed to multiple receivers in a defined group (Multicast). You can enter a dedicated multicast address and port for each stream. You can switch between the streams by clicking the appropriate tabs.

Notice!
Multicast operation requires a multicast-enabled network that uses the UDP and the Internet Group Management IGMP protocols. Other group management protocols are not supported. The TCP protocol does not support multicast connections.

A special IP address (class D address) must be configured for multicast operation in a multicast-enabled network.
The network must support group IP addresses and the Internet Group Management Protocol (IGMP V2). The address range is from 225.0.0.0 to 239.255.255.255.
The multicast address can be the same for multiple streams. However, it will be necessary to use a different port in each case so that multiple data streams are not sent simultaneously using the same port and multicast address.

Notice!
The settings must be made individually for each stream.

Enable
To enable simultaneous data reception on several receivers you need to activate the multicast function. To do this, check the box. You can then enter the multicast address.

Multicast Address
Enter a valid multicast address for each stream to be operated in multicast mode (duplication of the data streams in the network).
With the setting **0.0.0.0** the encoder for the relevant stream operates in multi-unicast mode (copying of data streams in the unit). The camera supports multi-unicast connections for up to five simultaneously connected receivers.

Notice!
Duplication of data places a heavy demand on the unit and can lead to impairment of the image quality under certain circumstances.

Port
Assign a different port to each data stream if there are simultaneous data streams at the same multicast address.
Enter the port address of the required stream here.

Streaming
Click the checkbox to activate multicast streaming mode for the relevant stream. An enabled stream is indicated by a check mark.

Multicast packet TTL
You can enter a value to specify how long the multicast data packets are active on the network. This value must be greater than one if multicast is to be run via a router.

15.47 Image Posting

You can save individual JPEG images on an FTP server at specific intervals. You can then retrieve these images at a later date to reconstruct alarm events if required. In order to configure image posting, and to save and retrieve JPEG images, you must create an Account in which to save and access them. If you have not configured an account, the following error message appears at the top of this page: “No configured account. Configure accounts.” Click the link to access the *Accounts, page 85* page.

Image size
Select the size of the images that you want to save:
– Small
– Medium
– Large
– 720p
– 1080p

File name
You can select how file names will be created for the individual images that are transmitted.
– **Overwrite** The same file name is always used and any existing file will be overwritten with the current file.
– **Increment** A number from 000 to 255 is added to the file name and automatically incremented by 1. When it reaches 255 it starts again from 000.
– **Date/time suffix** The date and time are automatically added to the file name. When setting this parameter, ensure that the unit's date and time are always correctly set. Example: the file snap011005_114530.jpg was stored on October 1, 2005 at 11:45 and 30 seconds.

Posting interval
Enter the interval in seconds at which the images will be sent to an FTP server. Enter 0 (zero) if you do not want any images to be sent.

Target
Select the target—the name of the account on the server—to which to save images.

Enable
Click this checkbox to enable face detection.

File format
Select the file format in which to save images. Options are JPEG (default), YUV420, TIFF.

Target
Select the target—the name of the account on the server—to which to save images.

Timeouts
Select the number of timesouts for image posting. The default is 0 (no timeout).

Maximum image width
Enter a number for the maximum width, in pixels, for the saved images.

15.48 Accounts

In order to configure image posting, and to save and retrieve JPEG images, you must create an Account in which to save and access them. You can create a maximum of four (4) accounts.

Type
Select the type of account: FTP or Dropbox.

Account name
Enter the name of the account.

IP address
Enter the IP address of the server on which you wish to save the JPEG images.

Login
Enter the login ID for the server.

Password
Enter the password that gives you access to the server. To verify the password, click the Check button to the right.

Path
Enter the exact path on which you wish to post the images on the server. To browse for the correct path, click the Browse button to the right.

Maximum bit rate
Enter the maximum bit rate for the JPEG images (in kbps).

15.49 IPv4 Filter

Use this setting to configure a filter that allows or blocks network traffic that matches a specified address or protocol.

IP Address 1 / 2
Enter the IPv4 address that you want to allow or block

Mask 1 / 2
Enter the subnet mask for the appropriate IPv4 address.

15.50 Encryption

A special license, with which you will receive a corresponding activation key, is required to encrypt user data. You can enter the activation key to release the function on the **Licenses** page (see *Licenses, page 87*).

15.51 Advanced Mode: Service

Maintenance, page 86
Licenses, page 87
Diagnostics
System Overview

15.52 Maintenance

Upgrading your camera
The camera allows an operator to update the camera firmware via the TCP/IP network. The Maintenance page allows updates of the firmware.
For the latest firmware, go to www.boschsecurity.com, navigate to the product page for your camera, and then download the software from the Software tab.
The preferred method to update your camera is through a direct connection between the camera and a PC. This method entails connecting the Ethernet cable from the camera directly to the Ethernet port of a PC.
If the direct-connect method is not practical, you can also update the camera through a Local Area Network (LAN). You cannot, however, update the camera through a Wide Area Network (WAN) or via the Internet.

Update server
Enter the path of the server on which to perform the update. Click **Check** to verify the path.

Firmware
The camera is designed in such a way that its functions and parameters can be updated with firmware. To do this, transfer the current firmware package to the unit via the selected network. It will then be automatically installed there.
In this way, a camera can be serviced and updated remotely without a technician having to change the installation on site.

Caution!
Before launching the firmware upload make sure that you have selected the correct upload file. Uploading the wrong files can result in the unit no longer being addressable, in which case you must replace the unit.
You should never interrupt the installation of firmware. An interruption can lead to the flash-EPROM being incorrectly programmed. This in turn can result in the unit no longer being addressable, in which case it will have to be replaced. Even changing to another page or closing the browser window leads to an interruption.

Upload

1. Enter the full path of the file to upload or click **Browse** to navigate to the required firmware file (*.fw).
2. Make certain that the file to be loaded comes from the same unit type as the unit you want to configure.
3. Next, click **Upload** to begin transferring the file to the unit. The progress bar allows you to monitor the transfer.
4. Click OK to the warning message to continue the firmware upload, or Cancel to stop the upload.
   The page displays a progress bar as the firmware is uploaded.
   Note: Once the progress bar reaches 100%, the system opens the reset page. Allow the reset page to complete its action.

Once the upload is complete, the new configuration is activated. The time remaining is shown by the message **going to reset Reconnecting in ... seconds**. The unit reboots automatically once the upload has successfully completed.

Download

1. Click the **Download** button. A dialog box opens.
2. Follow the on-screen instructions to save the current settings.

Configuration
You can save configuration data for the camera on a computer and then load saved configuration data from a computer to the unit.

SSL certificate
To be able to work with an SSL encrypted data connection, both ends of a connection must hold the relevant certificates. You can upload the SSL certificate, comprising one or multiple files, onto the camera.
If you wish to upload multiple files onto camera, you must select them consecutively.

1. Enter the full path of the file to upload or click **Browse** to select the required file.
2. Next, click **Upload** to begin transferring the file to the unit.
3. Once all files have been successfully uploaded, the unit must be rebooted. In the address bar of your browser, enter **/reset** after the IP address of camera (for example **192.168.0.10/reset**).

The new SSL certificate is valid.

Maintenance log
You can download an internal maintenance log from the unit to send it to Customer Service for support purposes. Click **Download** and select a storage location for the file.

15.53 Licenses

You can enter the activation key to release additional functions or software modules.

Notice!
The activation key cannot be deactivated again and is not transferable to other units.

15.54 Diagnostics

BIST
Accesses the Built-in Self Test (BIST). The BIST displays a Pass or Fail status on the most recent homing event.
Click the Start BIST button to initialize the BIST.

Logs
This section updates automatically with the history of the camera and maintains a log of all events such as those listed below. Click the REFRESH button to reload log data.

- Low voltage - a drop in incoming power below the level where the camera becomes non-functional
- High temperature - the internal temperature exceeds specifications
- Low temperature - the internal temperature exceeds minimum levels
- High humidity - the internal humidity exceeds 70%
- High vibration - the acceptable level of acceleration forces was exceeded
- Total hours of camera operation
- Illuminator aging history
- homing events
- power cycles (restarts)
- video loss

15.55 System Overview

The data on this page are for information purposes only and cannot be changed. Keep a record of this information in case technical assistance is required.

Notice!
You can select all required text on this page with the mouse and copy it to the clipboard with the [Ctrl]+[C] key combination, for example if you want to send it via e-mail.

Some devices ship with labels that identify the unique MAC address of each network device. The number on these labels matches the number in the MAC address field of the **System Overview** for each device. Bosch recommends that you keep the MAC address labels in a safe place for future reference.

16 Operation

16.1 LIVE Page

After the connection is established, the **LIVE** page is initially displayed. It shows the live video image on the right of the browser window. Depending on the configuration, various text overlays may be visible on the live video image.

Other information may also be shown next to the live video image. The items shown depend on the settings on the **LIVE Functions** page.

Display Stamping
Various overlays or “stamps” in the video image provide important status information. The overlays provide the following information:

Decoding error. The frame might show artifacts due to decoding errors. If subsequent frames reference this corrupted frame, they might also show decoding errors as well but won’t be marked with the “decoding error” icon.

Alarm flag set on media item

Communication error. Any kind of communication error is visualized by this icon. Cause can be a connection failure to the storage medium, a protocol violation with a sub component or simply a timeout. An automatic reconnection procedure is started in the background in order to recover from this error.

Gap; no video recorded

Watermarking not valid

Watermarking flag set on media item

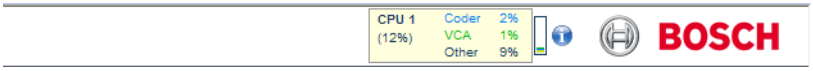
Motion flag set on media item

Discovery of storage not completed. If the information about recorded video is not cached, a discovery procedure is started in order find all recorded video. During this time, the “discovery” symbol is shown. While discovery is executed, gaps might be shown in places which the discovery has not yet reached. The gap will automatically be replaced by the true video, as soon as the correct information is available.

Maximum Number of Connections
If you do not connect, the unit may have reached its maximum number of connections. Depending on the unit and network configuration, each camera can have up to 50 Web browser connections or up to 100 connections via the Bosch Video Management System (BVMS).

Protected Network
If a RADIUS server is employed in the network for managing access rights (802.1x authentication), the camera must be configured accordingly, otherwise no communication is possible.

Processor Load
If the camera is accessed via the Web browser, you will see the processor load indicator in the top left of the window next to the manufacturer's logo.



You can obtain additional information to help when you troubleshoot or fine-tune the unit. The values indicate the proportions of the individual functions on the encoder load, shown as percentages.

- Move the cursor over the graphic indicator. Some additional numerical values are also displayed.

Image Selection

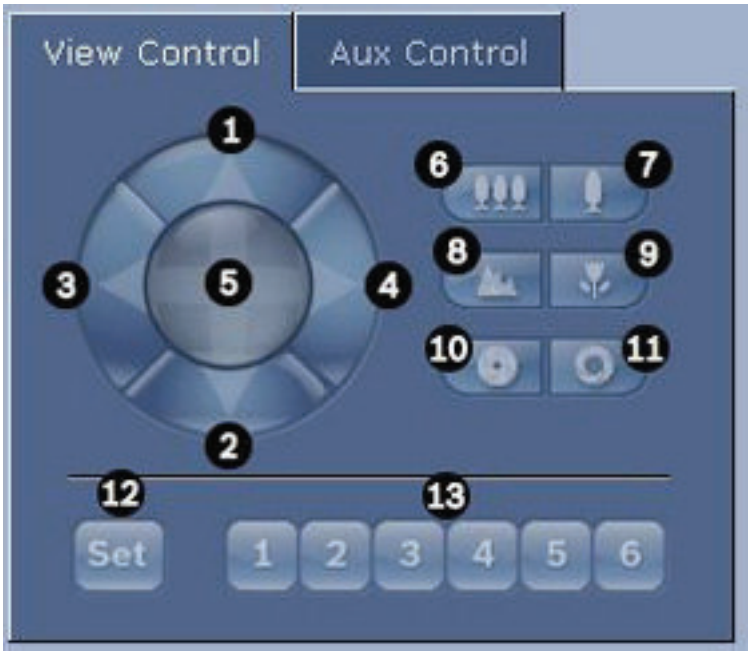
You can view the image of the camera in different displays.

- Click one of the tabs **Stream 1**, **Stream 2**, or **M-JPEG** below the video image to toggle between the different displays of the camera image.

16.1.1 View Control

View Control

The **View Control** tab allows you to control camera functions (pan, tilt, zoom, focus, and iris), navigate through on-screen menus and to view preset scenes (shots).



Ref #	Description	Ref #	Description
1	Tilts the camera up	8	Focus far²
2	Tilts the camera down	9	Focus near²
3	Pans the camera to the left	10	Iris close²
4	Pans the camera to the right	11	Iris open²
5	Pans and tilts the camera in all directions	12	Sets the pre-set scene for the corresponding button 1, 2, 3, 4, 5 and 6
6	Zoom out¹	13	Moves the camera to pre-set scene numbers 1, 2, 3, 4, 5 and 6
7	Zoom in¹		

[1] This function is also accessible by using the mouse scroll wheel while in the Live video frame.
[2] This button is also used as the “Enter” button to select menu items from the AUX tab.

To control a peripheral, follow these steps:

1. Click the appropriate controls.
2. Move the mouse cursor over the video image. Additional options for controlling peripherals are displayed with the mouse cursor.
3. To manually pan throughout the image area, move your cursor over any part of the live video. The image area displays a directional arrow (←→↑↓↖↗↙↘), then click and hold the right mouse key to pan the camera.

Preset List

The View Control Tab displays a list of all presets with their titles, if any are defined, below Presets 1-6. To move the camera to a preset scene, select the appropriate preset from the drop-down list. Refer to *Scenes and Tours, page 63* to define a preset scene and to specify a title for the preset.

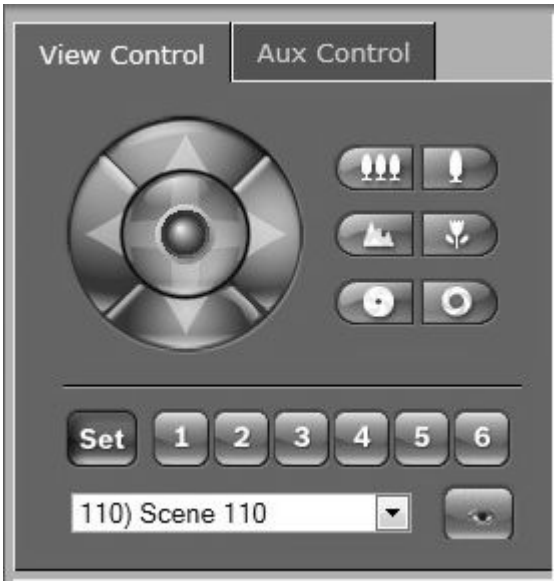


Figure 16.1: View control tab preset / scene list

16.1.2 AUX Control

Aux Control Tab

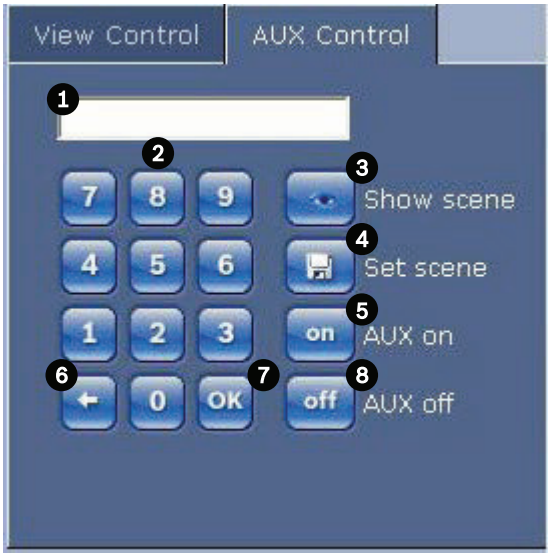
The **AUX Control** tab is used to enter pre-programmed keyboard control commands. These commands are composed of a command number plus the appropriate function key (Show scene, Set scene, AUX on, AUX off). A valid combination either issues a command to the camera or displays an on-screen menu.

To access the **AUX Control** tab, go to the **LIVE** page and click the **AUX Control** tab.

(Refer to the User Command Table for a list of all AUX commands.)

By default, the device is configured for a total of 256 presets.

Some legacy systems may not support presets above 99. In this case, you can set the camera to use only presets 1-99. Enter 151 on the keypad, and then click **AUX on**.



1	Command number field
2	Keypad (numbers 0-9)
3	Show a preset scene
4	Set a preset scene
5	Initiates a command
6	Deletes a number in the Command Number field
7	Used to select a menu item
8	Stops a command

To Enter a Keyboard Control Command:

1. Place the cursor in the Command Number field.
2. Click the desired command number via the on-screen keypad.
3. Click either the Aux on button or the Aux off button to initiate or stop the command.
4. If the command initiates a menu, use the Up/Down arrows on the View Control to navigate the menu. Click the Focus button or Iris button to select a menu item.

To Set a Preset Shot:

Preset shots (or scenes) are camera positions that are saved in memory for future use.

1. Move your cursor over the live image and wait for the area to display a directional arrow.
2. Click and hold a mouse button to pan to the desired position that you want to save.
3. Click any number combination from 1-256 from the on-screen keypad to identify the scene number.
4. Click the Set scene button. The image area displays a message that indicates which shot number was saved.

To View a Preset Shot:

1. Click the number of the scene you want to view using the on-screen keypad.
2. Click the Show scene button.

Notice!

For more information about the camera settings and controls, click the **Help on this page?** link to open the online help.

16.1.3 Special Functions

LIVE page Special Functions

The camera offers special command buttons on the **LIVE** page.

Scan 360°

Click this button to start a continuous 360° pan. To stop the continuous pan, click a directional control in the View Control tab.

Autopan

Click this button to pan the camera between user-defined limits. To set the left and right pan limits, refer to PTZ Settings in the Operator Manual. To stop the continuous pan, click a directional control in the View Control tab.

Tour A / Tour B

Click one of these buttons to start the playback of a recorded (guard) tour. A Recorded Tour saves all manual camera movements made during the recording, including its rate of pan, tilt and zoom speeds and other lens setting changes. To program a recorded tour, refer to PTZ Settings. To stop a tour, click a directional control in the View Control tab.

Warning!

Save presets using One Push (“Spot Focus“). Refer to *Lens Settings, page 60*.

Find home

Click the **Find home** button to recalibrate the home position for the camera.

Show home

Click the **Show home** button to display the current home position.

Refocus

Click the **Refocus** button to issue the One Push focus command. One Push activates the Auto Focus feature after the camera stops moving.

16.1.4 Digital I/O

The alarm icon is for information purposes and indicates the status of an alarm input: When an alarm is triggered, the icon lights up blue. The device’s configuration determines whether the alarm is displayed, as well as additional details. Refer to the online help for more information.

Triggering Relay

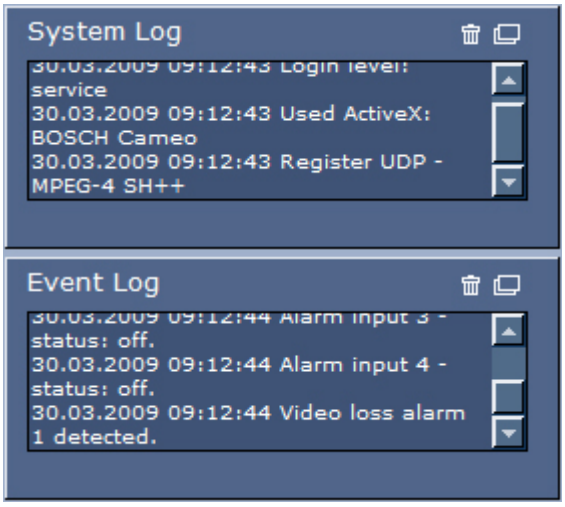
You can switch connected units using the relays in the camera (for example, lights or door openers).

- To activate this, click the icon for the relay next to the video image. The icon will be red when the relay is activated.

16.1.5 System Log/Event Log

System Log

The **System Log** field contains information about the operating status of the camera and the connection. You can save these messages automatically in a file (see the online help).


System Log
30.03.2009 09:12:43 Login level: service
30.03.2009 09:12:43 Used ActiveX: BOSCH Cameo
30.03.2009 09:12:43 Register UDP - MPEG-4 SH++
Event Log
30.03.2009 09:12:44 Alarm input 3 - status: off.
30.03.2009 09:12:44 Alarm input 4 - status: off.
30.03.2009 09:12:44 Video loss alarm 1 detected.

Events such as the triggering or end of alarms are shown in the **Event Log** field. You can save these messages automatically in a file (see the online help).

1. If you want to delete the entries, click the delete icon in the top right-hand corner of the relevant field.
2. If you want to view a detailed log, click the icon in the top right-hand corner of the relevant field. A new window will open.

16.1.6 Audio

Audio function

All users who are connected to the camera via Web browser can receive audio signals from the camera. Audio signals can only be sent to the camera by the user who connects to the unit first.

1. On the **LIVE** page, click anywhere next to the video image to remove the focus from the ActiveX.
2. Hold down the F12 key to establish a voice connection to the camera. The browser's status bar displays the message Send Audio ON.
3. Release the F12 key when you want to stop sending audio signals to the camera. The status bar displays the message Send Audio OFF.

Notice!

When the voice contact connection to the camera is broken, the next user to make a connection to the camera can send audio data to the camera.

16.1.7 Saving snapshots

Saving Snapshots

You can save individual images from the video sequence currently shown on the **LIVE** page in JPEG format on your computer's hard drive. The icon for recording single images is only visible if the unit is configured to enable this process.

- Click the icon. The storage location depends on the configuration of the camera.

16.1.8 Recording

Recording Video Sequences

You can save sections of the video sequence currently shown on the **LIVE** page on your computer's hard drive. The icon for recording video sequences is only visible if the unit is configured to enable this process.

- Click the icon to start recording. The storage location depends on the configuration of the camera. A red dot in the icon indicates that recording is in progress.

1. Click the icon again to stop recording.
2. To change the storage location for the recorded video, select **Advanced Mode > Recording > Storage Management** from the **SETTINGS** page.

Image Resolution

Sequences are saved at the resolution that has been preset in the configuration for the encoder (see *Basic Mode: Network, page 43*).

16.1.9 Playback

Accessing Recorded Video from the Recordings Page / PLAYBACK

Click **Recordings** to access the **Recordings** page from the **LIVE** page or **SETTINGS** page (the **Recordings** link is only visible if a storage medium has been selected).

Selecting Recordings

All saved sequences are displayed in a list. A track number is assigned to each sequence. Start time and stop time, recording duration, number of alarms, and recording type are displayed.

To play back recorded video sequences:

1. Select **Recording** 1 or 2 in the drop-down menu. (The contents for 1 and 2 are identical, only the quality and location may be different.)
2. Use the arrow buttons to browse the list.
3. Click a track. The playback for the selected sequence starts.

Export to FTP

Click **Export to FTP** to send the current track to the FTP server. If required, change the times within the selected range.

Controlling Playback

A time bar below the video image allows quick orientation. The time interval associated with the sequence is displayed in the bar in gray. A green arrow above the bar indicates the position of the image currently being played back within the sequence.

The time bar offers various options for navigation in and between sequences.

- Change the time interval displayed by clicking the plus or minus icons. The display can span a range from two months to a few seconds.
- If required, drag the green arrow to the point in time at which the playback should begin.
- Red bars indicate the points in time where alarms were triggered. Drag the green arrow to navigate to these points quickly.

Control playback by means of the buttons below the video image. The buttons have the following functions:

Start/Pause playback

Jump to start of active sequence or to previous sequence

Jump to start of the next video sequence in the list

Continuously select playback speed by means of the speed regulator (slide control):

Bookmarks

In addition, set markers in the sequences, so-called bookmarks, and jump directly to these. These bookmarks are indicated as small yellow arrows above the time interval. Use the bookmarks as follows:

Jump to the previous bookmark

Set bookmark

Jump to the following bookmark

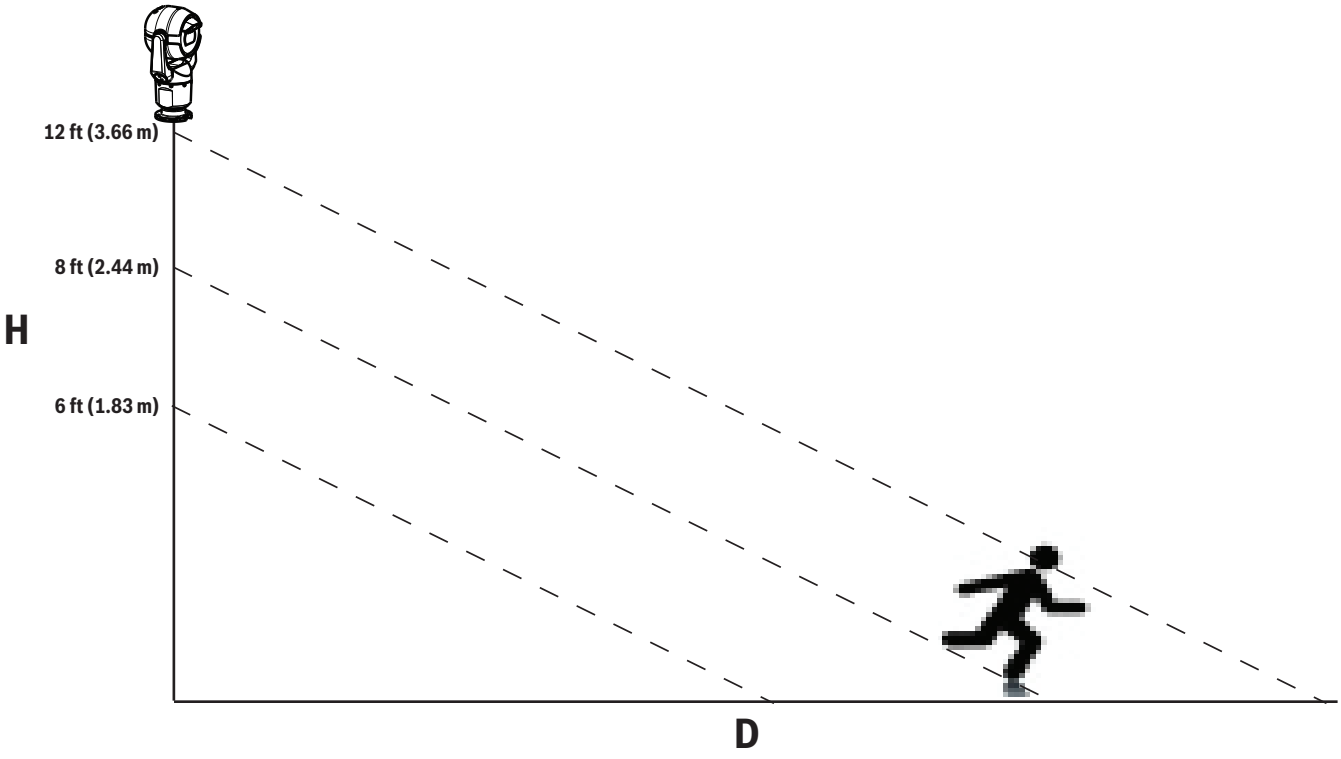
Bookmarks are only valid while in the Recordings page; they are not saved with the sequences. All bookmarks are deleted when leaving the page.

16.2 Using Intelligent Tracking

Configuring Intelligent Tracking

The camera utilizes the built-in Intelligent Video Analytics (IVA) to continuously follow an individual or object even if it passes behind a Privacy Mask or a stationary object. The camera uses objects detected by IVA in a stationary preset position to activate the Intelligent Tracking feature.

The Intelligent Tracking feature allows continuous on-screen following of an individual or an object. This feature operates by recognizing an object in motion and zooms in to approximately 50% (default Tracker zoom threshold) of the field of view for an average target height of six feet. This feature controls the pan/tilt/zoom actions of the camera to keep the selected object in the scene.



To activate the Intelligent Tracking feature, one of the following conditions must be met:

- The Silent IVA option must be selected in the VCA page on the Settings tab. Refer to *VCA, page 72*.
- IVA must be active for at least one preset scene in the VCA page on the Settings tab. If IVA is configured for one scene, then all other scenes have Intelligent Tracking enabled by default. If a scene has Motion+ of IVA Flow activated, however, then Intelligent Tracking is disabled for these scenes.

Notice!

The following actions occur if Intelligent Tracking is active:

All other IVA objects are disabled in scenes with Intelligent Tracking.

The camera automatically disables the display of compass headings. Once Intelligent Tracking is set to Off, the camera resumes display of the compass heading. Refer to *PTZ Settings, page 61* for details of the Compass feature.

Guidelines for Implementing Intelligent Tracking

Factors such as the viewing angle and unwanted motion (from trees, for example) may interfere with Intelligent Tracking operation. Use the following recommendations to ensure smooth Intelligent Tracking operation:

- **Mount/Mounting Surface Stability**
  - Mount the camera in the most stable position. Avoid locations affected by vibrations, such as those caused by a roof-top air conditioner. These vibrations may cause complications when the camera zooms-in on a target.
  - Use the pendant arm mount, if possible. This mount option provides the most stability for the camera.
  - Use guy wires to protect against strong winds if using the parapet mount.
- **Field of View**
  - Select a location and viewing angle that allows the flow of people to move across the camera's field of view.
  - Avoid motion that moves directly towards the camera.
  - Avoid locations that attract large numbers of people, such as retail stores or intersections. Intelligent Tracking is optimized for scenes with very few moving objects.
- **Unwanted Motion**
  - Avoid neon lights, flashing lights, night time lights, and reflected light (from a window or mirror, for example). The flickering of these lights can affect the Intelligent Tracking operation.
  - Avoid motion from moving leaves/branches that present a persistent fixed motion.

Operation of Intelligent Tracking

The Intelligent Tracking feature behaves in one of the following ways:

- **Camera detects an object in motion and automatically tracks the object**
  User actions always take precedence over Intelligent Tracking. If the camera is actively tracking an object and a user takes control, the camera will attempt to track the object after a period of inactivity.
- **An IVA alarm can trigger Intelligent Tracking to track a detected object**
  A rule that triggers an IVA event must be set. The following standard tasks can be set: Object in field, Crossing Line, Loitering, Condition change, Following route, Entering field, and Leaving field. Refer to the *IVA 5.60 Operation Manual* for specific information.
- **A user manually selects an object in the live image area to track**
  The Intelligent Tracking feature allows a user to click a moving object in the live image display inside the **LIVE** page to identify an object to track.
- **Use AUX Command 78 to activate/deactivate Intelligent Tracking**
  Use AUX ON 78 to enable the Intelligent Tracking Auto mode. This command can be used in conjunction with the rules engine.

Using Intelligent Tracking

Use the following options on the **LIVE** page to control Intelligent Tracking:

Note: If you do not see these controls on the **LIVE** page, ensure that the **Show** '**Tracking**' option is enabled on the **LIVE Functions** page. Refer to *LIVE Functions, page 50*.

- **Off**: Disables Intelligent Tracking.

– **Auto**: In this mode, the camera actively analyzes the video to detect any moving object. If it detects movement, the camera begins to track the moving object. This mode is most useful for scenarios where no motion is expected in the scene.
– **Click**: In this mode, users can click an object moving in the live video image to enable the camera to track the movement of the selected object. This mode is most useful for scenarios where normal scene activity is expected.

If the Intelligent Tracking feature is set to Auto or Click, the live video image displays an eye icon with a symbol that conveys the state of Intelligent Tracking activity:

Graphic	Description	Explanation
	White eye, flashing	Intelligent Tracking is actively following a target.
	Gray eye with a red “X”	Intelligent Tracking lost the selected target and will wait for the target to reappear using the last known trajectory. During the IDLE state, the camera will not seek other objects in motion.
	Gray eye without a symbol	Intelligent Tracking is idle, waiting to track a target.
	Gray eye with a “pause” symbol	Intelligent Tracking attempts to track a target passively while a user has camera control.

Tracking triggered by IVA rules

In this mode, the camera continuously analyzes the scene for IVA alarms or IVA rule violations. If an IVA rule is violated, it triggers the advanced tracking feature of the camera to start following the object / person that triggered the alarm. This allows the camera to track moving objects of interest without getting distracted by other moving objects in the scene.

To activate this mode, you must enable IVA by selecting either IVA 5.6 or IVA 5.6 Flow in the **Analysis type** field of the **VCA** page (from the **SETTINGS** page, select **Advanced Mode > Alarm > VCA**). Refer to the *IVA 5.60 Operation Manual* for specific information.

If the **Show VCA metadata** option is selected in **LIVE Functions** (from the **SETTINGS** page, select **Advanced Mode > Web Interface > LIVE Functions**), the live view will show the following metadata objects in the **LIVE** page view:

– Objects in motion are initially identified in the video.
– Actively tracked object in motion are identified in the video.
– When an object in motion is lost, a diamond appears designating the area where the target was lost.

Several reasons may cause the Intelligent Tracking to stop tracking a target:

– The target has stopped moving while being followed by Intelligent Tracking.
– The target has moved behind a static object in the scene.

In these instances, Intelligent Tracking switches to the IDLE mode (pink eye icon) and waits for the target to reappear in the scene. The camera will restart tracking if a target starts moving in the same area where the initial target stopped moving or if the camera detects an object moving along the last known trajectory.

16.3 Recommended Use of Your MIC Camera

Bosch recommends that you consider the following in order to optimize the life of your Bosch camera.

1. Guard Tours and Preset Tours

With your camera, you can cover a full 360° view using continuous Guard Tours or Preset Tours. Depending on the type of camera tour selected, your camera might be either in continuous motion (pan, tilt, or both) or moving between selected preset positions.

Continuous Guard Tours

Guard Tours are a very effective way of monitoring the entire scene; however, if not configured properly, continuous Guard Tours can reduce the service life of your camera considerably. Continuous Guard Tours should be used in applications where the tours are required to run for a fixed duration during the day (not more than twelve hours/day). Additionally, for best results, the continuous guard tour should be used in scenes with sufficient illumination levels (50 lux or better), should be at least 60 seconds in duration, and should have a smooth pan/tilt path (without erratic stops and starts), with the lens set at a wide angle (infinity focus). The tour should also include at least 10° of tilt movement.

Preset Tours

For scenarios that require the camera to be in continuous motion for most of the day, Bosch recommends that you set the camera in Preset Tour mode, moving between a desired set of presets. For best results, always ensure that each preset has a dwell time of at least 5 seconds.

2. Scene Illumination and Focus Settings

Your camera uses a high-sensitivity image sensor and a high-quality lens with a precise drive train control to maintain the best focus of the image. The Autofocus mechanism tries continuously to make the image details appear sharp. Under low light and low contrast scenarios, the Autofocus algorithm may not be able to find the correct focus points because of the lack of detail in the scene. In this case, it will keep driving the focus motor to find the best focus. If this state continues for long, the focus mechanism of your camera could be damaged beyond repair.

For best results, maintain the scene illumination (visible light and/or IR illumination) to a level that allows the camera to easily resolve the details in the scene. The illumination requirements are site-specific and should be verified during camera installation and configuration. For best camera performance, the scene should have at least 50 lux of illumination.

For scenes where sufficient lux level cannot be maintained, the camera should be used with One Push (“Spot Focus”), and you should avoid using continuous Guard Tours.

3. Power-over-Ethernet (PoE)

Use only approved High PoE devices – those that Bosch recommends, or those that Bosch offers, such as a High PoE Midspan midspan or the VIDEOJET connect power supply - between the camera and your PoE network. Improper network connection can result in intermittent camera reboots. If the camera reboots frequently, test your camera with another power supply.

17 Troubleshooting

Table of Troubleshooting Issues

The table below identifies issues that could occur with the camera, and how to resolve them.

Problem	Questions to Ask/Actions to Resolve the Problem
No camera control.	– Ensure that the LAN cable has good connection and is secured. – Refresh the browser and ensure that video is updated. – Cycle the camera's power off and on.
Video is rolling, noisy, or distorted.	– Check the integrity of all connectors and splices of the Ethernet cable. If O.K., then: – Contact Bosch Technical Support.
Camera moves when attempting to move other cameras.	– Check that the camera’s IP address is properly set. If camera’s IP address is not set, then: – Use Configuration Manager to confirm that two cameras do not have the same IP address. If they do, change the address of one of the cameras.
No Network Connection.	– Check all network connections. – Ensure that the maximum distance between any two Ethernet connections is 100 m (328 ft) or less. If O.K., then: – If you are behind a firewall, ensure that the Video Transmission mode is set to UDP.
Camera does not operate at all, or does not operate as expected, after being subjected to extreme low temperatures (below -40 ° (-40 °F)).	- Allow the camera to warm up. The camera requires a 60-minute warm-up prior to PTZ operations. - If camera does not operate after this warm-up period, then reset the camera. In the URL line of your web browser, type “/reset” at the end of the IP address of the camera.
Camera reboots frequently or intermittently	Test your camera with another power supply.
Nothing appears on the screen.	Are the power cord and line connection between the camera and monitor made properly?
The image on the screen is dim.	Is the lens dirty? If so, clean the lens with a soft, clean cloth.
The contrast on the screen is too weak.	Adjust the contrast feature of the monitor. Is the camera exposed to strong light? If so, change the camera position.
The image on the screen flickers.	Does the camera face directly into the sun or fluorescent lighting? If so, reposition camera.

The image on the screen is distorted.	Is the power frequency set properly in sync? If the power frequency is not set correctly, the line lock synchronization mode cannot be used. Set the synchronization mode to INT. (NTSC Model power frequency in LL mode: 60 Hz.)
No video.	– Check that the mains power to the power supply is on. – For IP-enabled cameras: Check to see if you have a web page. If you do, then try cycling the camera's power off and on. If you do not, then you may have the wrong IP address. Use Configuration Manager to identify the correct IP address. If O.K., then: – Check that there is 24 V output from the transformer. If O.K., then: – Check the integrity of all wires and mating connectors to the camera.
Picture is dark.	– Check that the Gain Control is set to High. If O.K., then: – Check that the Auto Iris Level is set to the appropriate level. If O.K., then: – Check that the camera lens cover is removed. If O.K., then: – Check that the maximum Ethernet cable distance has not been exceeded. If O.K., then: – Restore all camera settings.
Background is too bright to see subject.	Turn on backlight compensation.

18 Maintenance

Cleaning - Unplug the device before cleaning. Generally, using a dry cloth for cleaning is sufficient, but a moist, fluff-free cloth may also be used. Do not use liquid cleaners or aerosol cleaners.

No User-serviceable Parts
Except for the external wiper blade, the device contains no user-serviceable parts. Contact your local Bosch service center for device maintenance and repair. In the event of failure, the device should be removed from site for repair.

On-Site Inspection
It is recommended that the device be inspected on-site every six months to check mounting bolts for tightness, security, and any signs of physical damage. Inspection of this device shall only be carried out by suitably-trained personnel in accordance with the applicable code of practice (for example, EN 60097-17).

Information about cameras with illuminators
The text in this section applies only to cameras which have the optional illuminator accessory. When servicing the device, disconnect power to the device to avoid possible exposure to the eyes. If disconnecting power to the device is not possible, use appropriate shielding to block the LED arrays or wear appropriate eye protection.

Illuminator removal
If you must remove the illuminator because it is damaged or has failed, follow these steps:

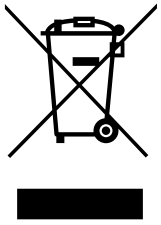
1. Remove the three (3) M4 Torx screws.
2. Install the access plug (which may be stored in an access hole of the MIC DCA or the wall mount accessory; if not, see the note below.)
3. **Note:** If you do not have an access plug, do not remove the illuminator until you request and receive a new access plug from Bosch.

19 Decommissioning

19.1 Transfer

The unit should only be passed on together with this installation guide.

19.2 Disposal



Old electrical and electronic appliances

Electrical or electronic devices that are no longer serviceable must be collected separately and sent for environmentally compatible recycling (in accordance with the European Waste Electrical and Electronic Equipment Directive).

To dispose of old electrical or electronic devices, you should use the return and collection systems put in place in the country concerned.

20 Technical data

For product specifications, see the datasheet for your camera, available on the appropriate product pages of the Online Product Catalog at www.boschsecurity.com.

21 Keyboard Commands By Number

Note: * denotes a Locked command.

Function Key	Command No.	Command	Description
On/Off	1	Scan 360° / Auto Pan (Continuous)	Activates /deactivates Autopan without limits.
On/Off	2	Autopan (within Limits)	Activates /deactivates Autopan between limits.
On/Off	3*	Iris Control	Enters the menu (auto, manual) for iris control.
On/Off	4*	Focus Control	Enters the menu (spot, auto, manual) for focus control.
On/Off	7	Play Custom Pre-position Tour	Activates /deactivates the playback of a custom, pre-position tour.
On/Off	8	Play Pre-position Tour	Activates /deactivates the playback of a pre-position tour.
On/Off	9*	Inactivity Mode	Enters the inactivity menu (Off, Return to Scene 1, Recall Previous PTZ Command).
On/Off	11*	Auto Iris Level Adjust	Enters the Iris Level Adjustment menu.
On/Off	14	Set Autopan and Scan Speed	Enters the speed adjustment slide bar.
On/Off	15	Set Pre-position Tour Period (dwell)	Enters the dwell adjustment slide bar.
On/Off	18*	AutoPivot Enable	Enables/disables AutoPivot.
On/Off	20	Backlight Comp	Turns Backlight Compensation on or off.
On/Off	23*	Electronic Shutter	Enters the Shutter Speed slide bar.
On/Off	24	Stabilization	Turns Electronic Stabilization on or off.
On/Off	26	Wide Dynamic Range	Activates /deactivates Wide Dynamic Range (WDR).
On/Off	35*	White Balance Mode	Enters the White Balance menu.
On	40*	Restore Camera Settings	Restores all settings to their original defaults.
On/Off	43*	Auto Gain Control	Switches AGC modes (On, Auto, Off).
On/Off	44*	Aperture Correction (Sharpness)	Enters the Sharpness menu.
On	46*	Advanced Menu	Enters the Main Setup menu.
On	47	View Factory Settings	Displays all menu default settings.
On/Off	50	Playback A, continuous	Activates /deactivates continuous Playback A.
On/Off	51	Playback A, single	Activates /deactivates single Playback A.
On/Off	52	Playback B, continuous	Activates /deactivates continuous Playback B.

Function Key	Command No.	Command	Description
On/Off	53	Playback B, single	Activates /deactivates single Playback B.
On/Off	54	IR Illuminator	Controls IR Illuminators (On/Off).
On/Off/ Auto	56	Night Mode Menu	Enter the Night Mode menu (On, Off, Auto (Day/ Night only)).
On/Off	57	Night Mode Control (IR Filter In/Out)	Enables/disables Night Mode (Day = Off /Night = On).
On/Off	58*	Day/Night Threshold	Enables/disables the day/night threshold (On–menu (Day/Night only)).
On/Off	59	Night Mode Priority	Motion–Activates Night Mode before slow shutter, preserving full-frame integration as light is reduced. Color–Activates slow shutter before Night Mode, preserving color longer as light is reduced.
On/Off	60*	On Screen Display	On–Enables on-screen display. Off–Disables on-screen display.
On	61*	OSD Display Adjust	Adjust the view of the On-screen Display.
On	62	Pre-position (Scene) Title menu	Enters the Pre-position Title menu. Refer to Specifying a Shot or a Sector Title.
On	63*	Zone/Sector Title Menu	Enters the Zone Title menu. Refer to Specifying a Shot or a Sector Title.
On	64	Alarm Status	Enters the Alarm Status menu
Off	65	Alarm Acknowledge	Acknowledges alarm or deactivates physical outputs.
On	66	Display Software Version	Displays the number of the software version.
On/Off/ Auto	67	IR Focus Correction	On (two times)–Activates focus compensation when using IR illuminators. Off–Deactivates focus compensation when using normal lighting. Auto–Automatically activates/deactivates IR Focus Correction when IR illuminators turn on/ off.
On/Off	68	White light illumination	On–Turns on White lights Off–Turns off White lights
On/Off	69*	Alarm Rule Activation/ Deactivation	On–Enables all alarm rules. Off–Disables all alarm rules.
On	72	Re-initialize Camera	Performs camera/lens re-initialization functions.
On	79*	Camera Height	Enters the Camera Height menu.

Function Key	Command No.	Command	Description
On/Off	80*	Digital Zoom Lock	Turns digital zoom on and off.
On/Off	81	Alarm Output 1 Open Collector	On–Activates output. Off–Deactivates output.
On/Off	82	Alarm Output 2 Open Collector	On–Activates output. Off–Deactivates output.
On/Off	83	Alarm Output 3 Open Collector	On–Activates output. Off–Deactivates output.
On/Off	84	Alarm Output 4 Relay	On–Activates output. Off–Deactivates output.
On/Off	86*	Sector Blanking / Masking	Enters/exits the Sector Blanking menu.
On/Off	87*	Privacy Masking	Enters/exits the Privacy Masking menu.
On/Off	89	Preposition Overwrite Confirmation (toggle)	On–Issues a message that prompts for approval to overwrite a preposition. Off–No confirmation message issued.
On/Off	90	Command Lock/Unlock	On–Lock on Off–Lock off
On/Off	91*	Zoom Polarity	On–Reverse Off–Normal
On/Off	92*	Focus Polarity	On–Reverse Off–Normal
On/Off	93*	Iris Polarity	On–Reverse Off–Normal
On/Off	94*	Set Azimuth Zero Point / Recalibrate Azimuth Compass	Sets the zero degree pan position. Refer to Azimuth, Elevation, and Compass Directions.
On/Off	95	Display Azimuth/Elevation Readings	On–Displays azimuth/elevation readings. Off–Hides azimuth/elevation readings. Refer to Azimuth, Elevation, and Compass Directions.
On/Off	96	Display Compass (Point) Readings	On–Displays compass heading. Off–Hides compass heading. Refer to Azimuth, Elevation, and Compass Directions.
On	99	Factory P/T Home Position	Recalibrates home position; can be used as an Alarm Output.
On/Off	100	Record A	Activates/deactivates recording A.
On/Off	101	Record B	Activates/deactivates recording B.
	102	Wiper alarm	Manual on/off

Function Key	Command No.	Command	Description
	103	Wiper wipe	Intermittent; wipes twice, then turns off after 15 seconds.
	104	Wiper wipe	On shot; wipes five times, then turns off.
	105	Washer/Wiper	Activate
On	997	FastAddress, display	Display current address
On	998	FastAddress, all units	Display and program current address
On	999	FastAddress, unaddressed cameras	Display and program unaddressed MIC-550 units
Set	“1-99”	Pre-position Programming	Set ##–Programs a preset view
Shot	“1-99”	Pre-position Recall	Shot ##–Recall programmed preset
Set	100	Pre-position Menu	Enters the Pre-position menu
Set/Shot	101	Autopan Left Limit	Set–Programs left limit Shot–Shows limit
Set/Shot	102	Autopan Right Limit	Set–Programs right limit Shot–Shows limit
Set	110	Factory P/T Home Position	Set–Recalibrate home position
Set	802*	Edit Password	Enters the Edit Password menu
Set	899*	Reset ALL	Restores all settings to original defaults and clears all user-programmed settings
Set	900	Edit Tour 1 (Standard)	Enters the Standard Tour Scene menu
Shot	900	Edit Tour 2 (Custom)	Enters the Custom Tour Scene menu
Set/Shot	901-999	Adds/Removes a Preposition Shot from Tour 1	Set ###–Adds preset Shot ###–Removes preset

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